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Rock Products

DEVOTED TO THE PRODUCTION AND SALE OF ROCK AND CLAY PRODUCTS.

Vol. II. LOUISVILLE, KY., FEBRUARY, 1904. No. 11.

A Study in Asphalt Paving.

An ordinary observer seldom appreciates the amount of care and work other than the heating of the materials and hauling to the street and spreading and rolling the same, necessary to pave a street with asphalt.

The necessary conditions in the laying of an asphalt street are very simple, but in order to have a satisfactory pavement, the closest attention must be given to the conditions of the material employed, the kind of traffic on the street and only the most careful experimenting on the raw material insures success.

An asphalt paving consists of three parts, the base, binder and wearing surface.

A Pavement of Three Parts.

The base of the structure is perhaps as important a consideration as any part of the pavement. It is usually about six inches in thickness and is made of a concrete containing about three parts of stone crushed so as to pass a two and a half inch screen, one part cement and four parts sand and gravel. The sand and cement are mixed together, water added to form a stiff paste and then the stone added in certain proportions, but so as to give a slight excess of mortar. The quality and kind of sand used has been found to influence the durability of the base and has to be carefully selected, and stone dust, often limestone dust, is substituted for part of the sand, and this dust serves to toughen the cement and make it impervious to water. The base has to be made especially firm, for while the wearing surface, or top of the pavement, may be renewed as it wears out, the base need never be reconstructed if so laid at first that it presents a support and proper resistance for the traffic which goes to wear out in time the top covering, and if this base should have to be renewed as often as the top covering the asphalt pavements would truly be expensive luxuries. Old well-settled cobble, granite block, macadam, or asphalt pavements are often used as a base, the only preparation necessary being a thorough cleaning, a slight covering of broken stone with a mixture of the cement put over it, to make it sufficiently rough to hold the binder which is prepared in a more complicated, but not more careful manner. This binder which, as its name indicates, serves to unite the base and wearing surface, is about two inches thick. It consists of clean broken stone, which will pass a one and a quarter inch screen.

How Stone Dust Is Used.

Sometimes it is necessary to remove some of the stone dust, as not more than five or six per cent. of the material passing a No. 10 screen can be used. This stone is then heated to a temperature of about 300° F., and mixed by machinery with asphalt cement of about the same temperature, in such proportions that the resulting mixture contains about five per cent. of bitumen. The asphalt cement used in the binder is softer than that used in the surface mixture, and prevents to some extent the drying out of the surface mixture. It must not, however, be soft enough to allow the slipping of the surface. The presence of the fine dust in the stone, however, to some extent prevents this by forming a cement with the asphalt. The binder, when ready to put on the road, must answer many requirements, both as to looks, which should be glossy, have no excess of cement, and have each stone entirely covered with the cement, giving a look of a honeycomb to the mixture. From the mixing vat it is dumped into carts, hauled to the work and spread on the prepared base, to such a thickness that when compacted by rollers, it will be about an inch and a half thick. This is then ready for the wearing surface, consisting of the asphalt cement mixed with sand and generally limestone dust in proportions varying with the use which is to be made of the material, that is, according to the traffic of the street, but the percentage of the bitumen soluble carbon bisulphide, is seldom outside of the limits of nine to eleven per cent. In the making of this wearing surface the sand is heated to 300 F., mixed with the cold pulverized limestone, then mixed with the asphalt cement in the proper proportion, at the required temperature. It is then brought to the work in covered carts, spread over the binder to an even depth with hot rakes, rolled with a small hand roller, dusted with finely ground dust and then rolled with a heavy five to ten-ton roller to a good surface, the joints between old and new surfaces or along car tracks and curbing being tamped into position with hot irons.

The Requirements in Sand.

Of the ingredients used in the preparation of this cement, the sand used is found to be as important a feature as any. A sand that answers all purposes is seldom found, and several different sands are often mixed to form the proper proportion of coarse and fine sand, and also stone dust is sometimes added—generally limestone dust. Very clean sharp grained sand answers better than round grained, the larger grains must be comparatively hard so that they do not crush by wear, and thus form new particles uncovered by cement.

In looking at asphalt pavements the various cracks, wrinkles, holes and rolls come readily to notice, and the causes of these defects are various and due to more reasons than a casual observer might think. It is not always the fault of the asphalt, the substance perhaps most frequently blamed, for the same asphalt that has been used on a very much cracked and much worn street, is often found to have been used on a street that after constant use and heavy traffic for years, shows but few defects. It is more often the manipulation of the material used, that causes the defects.

Why Asphalt Streets Develop Faults.

Among the commonest imperfections noticed are the long straight cracks which keep widening and lengthening until they break up into very objectionable holes if not repaired. These are generally apt to be due to the contracting of the surface mixture under the influence of cold, and are more apt to be seen on streets that are but little used, than on streets with much traffic, which is accounted for by the fact that constant travel keeps the always more or less pliable asphalt kneaded together, and also constant contraction and expansion without the kneading of travel, renders the asphalt porous and liable to disintegration by water, etc. If a street with a large amount of traffic cracks badly, it is generally due to lack of bitumen in the cement, or the cement was too hard in the first place. Experiment has shown that the cement should never err in the point of hardness, but should be as soft as is possible without having it too soft for the conditions for which it will be subjected. It will therefore be seen that besides the materials used and the constituents of the cement, the street itself has to be studied before the cement is laid, and consideration given as to whether there is more or less traffic, whether the street runs North, South, East or West, whether it is wide or narrow, whether it is shady or exposed to the direct action of heat and cold, or whether to a combination of these circumstances.

Another noticeable disfigurement of an asphalt pavement is the wavy appearance of the asphalt, and the inclination it shows to crowd into gutters or flow down hills. This is due to a too soft surface mixture or more commonly to a defective binder, that is, one not rough enough to hold the surface mixture solid when travelled upon, and therefore allows it to be pushed about by wheels or wagons. The base is sometimes at fault in that it does not hold the binder secure, letting the pavement slide. The most objectionable feature of bad asphalt is, however, the disfiguring holes made by disintegration of the pavement in spots. This is accomplished by various causes, among which are a too hard cement, which, contracting, becomes brittle in cold weather and allows the pavement to be ground away by travel, and thus rendered accessible to atmospheric conditions. Disintegration by water oozing up through the base is found to be quite common, causing the rotting of the pavement under the surface, the slipping of the surface mixture, and finally a hole. Freezing of this water causes the asphalt to break up even when the asphalt itself is unaffected. Also the illuminating gas is held responsible for unsightly holes, as it escapes from imperfect pipes and its hydrocarbons unite with the hydrocarbons of the asphalt to the detriment of the asphalt. Oil used in the binder, if present in too large quantities, softens the asphalt, especially if coal tar has been used in the binder instead of asphalt cement. The cracks and disintegration along the rails of a car line are probably mostly caused by the vibration and jar caused by the car and one or two rows of paving blocks, brick or stone, are often used next to the tracks.

The Story of Asphalt Street Development.

The use of asphalt for paving has been applied in earliest times, but it was not until 1838 that bituminous limestone from Seyssel, France, and Val de Travers, Switzerland, was used as a pavement on the streets of Paris. In 1840 asphalt pavements were laid in Switzerland. In 1869 the first asphalt pavement was laid in London, and about 1874 the use of this material was started in Berlin, Germany.

The first pavements in the United States were laid from 1870-1873, but as coal tar was used as a cementing material, they proved worthless.

In 1871-1872 De Smedt took out a patent for use with Trinidad asphaltum, using petroleum residuum as a flux, and laid an asphalt pavement.

A Bit of Early History.

The first recorded shipment of pitch from Trinidad is in 1867, when 700 tons were shipped to America and 3,027 tons to Europe. In 1901, the exports of both lake and land asphaltum from

(*Continued on Page 10.*)

D. W. Pratt

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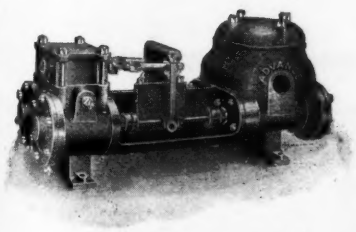

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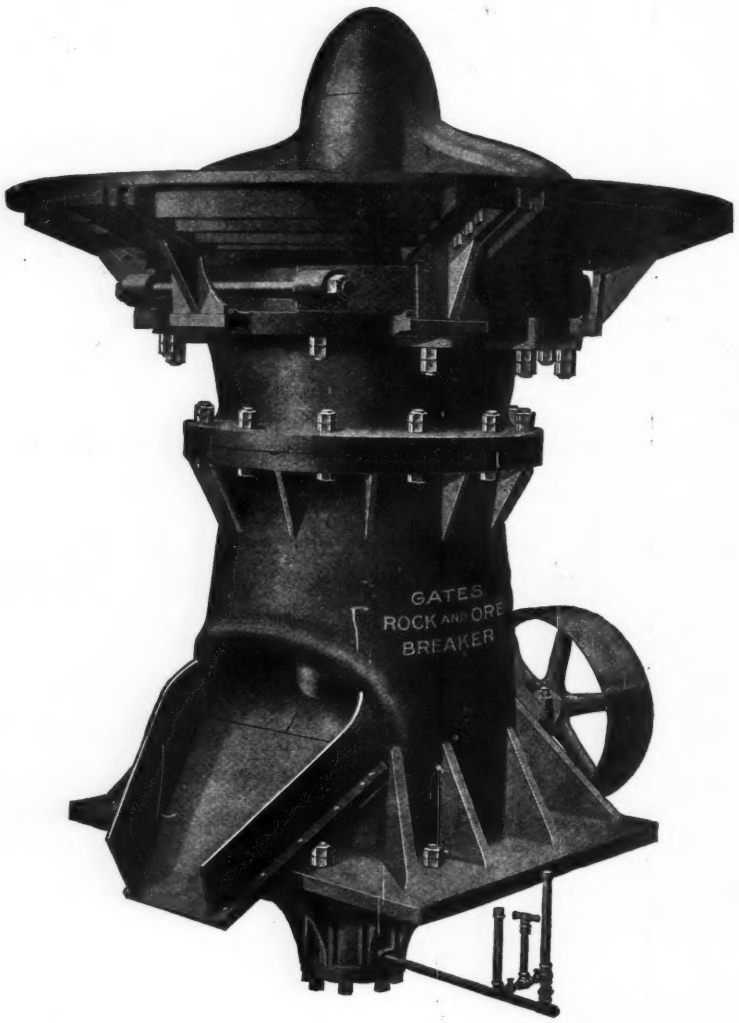

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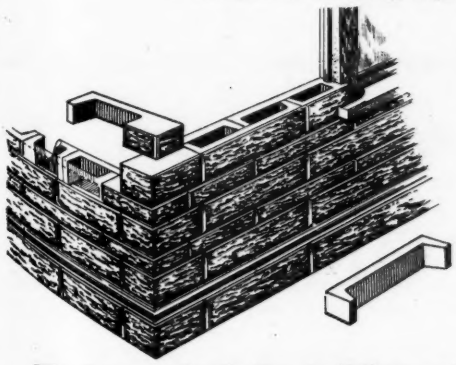

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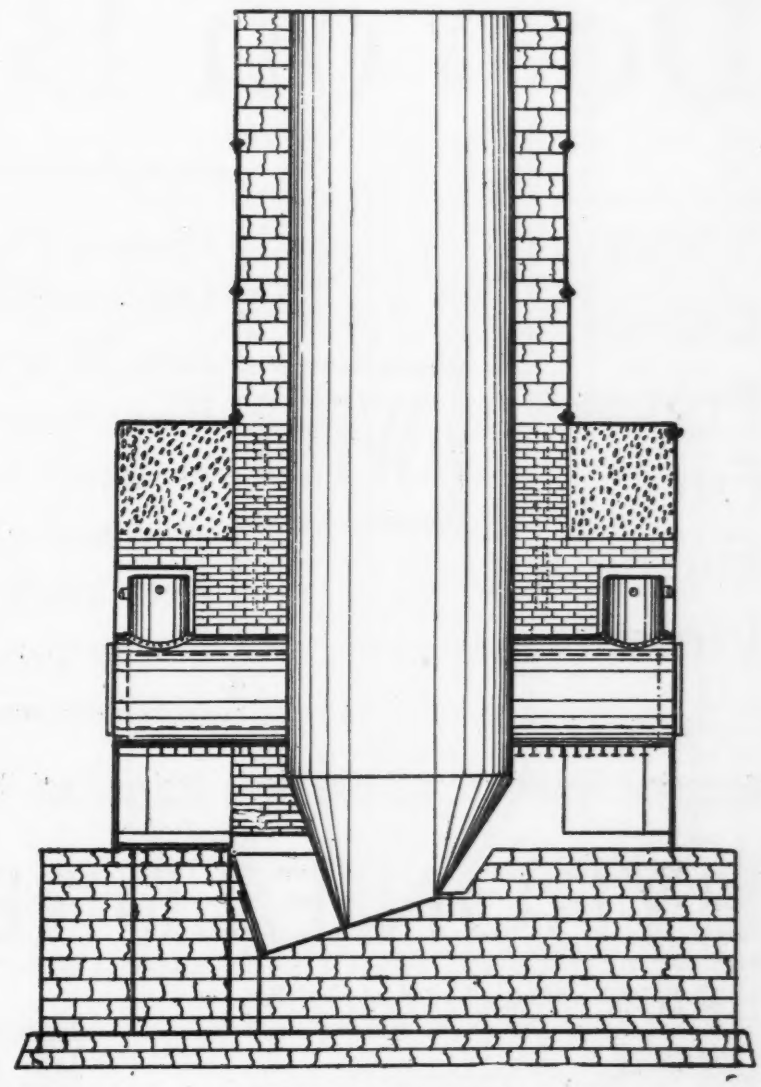

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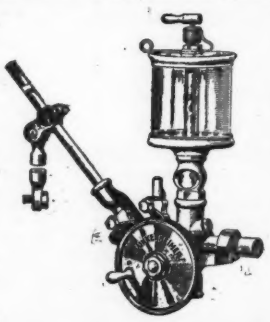

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KEEP the quarry clean.

DON'T sell agricultural lime where it is not needed.

THE crushed stone men need to get closer together.

IN buying batteries for blasting the best is the cheapest.

THE artificial stone men are growing in numbers and influence.

DON'T try to run the other fellow out but make a friend of him.

CONCRETE is adding new uses to its conquests from day to day.

THE prospects for a good profitable business year grow brighter day by day.

THE fuel problem is a burning question in the lime and cement industries.

THE cut stone men successfully started the ball rolling. You should join them.

THE prospects for an increased production of building stone this year are good.

IF you keep your eagle eye on the fluctuations of costs, it will help you stop the leaks.

THE plug drill is getting a goodly share of attention from quarry operators these days.

THE greatest meeting in the history of the builders' supply trade was held at Buffalo.

THE compressed-air drill seems to be the proper instrument of torture in the stone quarry.

INTELLIGENT, friendly co-operation is the watchword in the trades ROCK PRODUCTS covers.

To operate a cement plant ten months a year instead of twelve would insure a staple price.

THE brick men with their best bib and tucker were in command at Cincinnati the past week.

THE gypsum industry has been doing its share of growing the past two years, and is still at it.

IMPROVED methods and intelligent records will reduce the wastes to a minimum in rock product lines.

A GOOD card system covering costs in the stone business is essential to the greater success of the business.

IN the dark ages before association life was considered a necessity, intelligent prices were few and far between.

FROM the tone of the reports from some parts of the salt field it looks like there is room for a little getting together of the salt interests.

THE weather man is one of the fellows that won't submit to arbitration. He does as he pleases, and we have to make the best we can of it.

THE machinery men selling to the quarry men, manufacturers and dealers could help themselves by saying a good word for the associations.

THE social spirit is still growing with the Portland cement manufacturers, and it is helping solve some of the vexing problems of the industry.

THE uniform contract under consideration at Buffalo, if adopted, will add stamina to the manufacturer and dealer and improve the profits in building material.

SIMPLICITY is a great factor in appliances and machinery for stone working, and this point should be kept in mind by designers of labor-saving machines and appliances.

THE quarrymen and manufacturers swarming around any new contrivance to reduce the cost in quarrying and handling of stone is like the hungry bass after a fly.

GET your pumps in good order, or order new ones if you are ever troubled with water in the quarry, for when spring opens up you want to be pumping and not repairing.

SPECIAL tests should be made on pumping or any other conditional work in order to determine the proper percentage to go in the cost of all material for basing the price.

THE outlook in the slate field continues bright not only for the well-known sections in the North and East, but the great Southwest is looming up with bright promises.

THE difference in the cost of getting stone out ought not to show in the price. Because you have special facilities, there is no reason why you should give it away to the customer.

A GREAT variety in marble is promised us from the West side of Uncle Sam's domain, and those interested in developing the deposits out there are going at it like they mean business.

WE are authoritatively informed that an item in ROCK PRODUCTS produced greater results than a year's advertising in other publications. How the world do move in twenty-two months!

THE artificial coloring of stone is a matter that receives some attention from the stone trade, but the matter of preventing discoloring of stone structures is a more serious problem with some people.

SUPERINTENDENTS of quarries or manufacturing plants, if not allowed to get in touch with other operators, their methods become obsolete. There is nothing like an exchange of ideas among practical men.

WHAT per cent. of the original cost do you figure on for repairs and maintenance in your crushing plant? We have some figures on the subject, but would like to hear from others in the trade so as to get at an average basis.

THE retail monument men seem to be preparing for a larger and better business than ever the coming season, for from all parts we hear reports of enlargements and the installation of pneumatic tools, etc., that speak of prosperity and a bright outlook.

THE quarrymen and cut stone contractors realize that they have a mutual interest in pushing stone, and they are going at it in the right way, by working hand in hand on the basis of live and let live, and with concerted as well as individual effort. Let the good work go on.

IT looks like the dullness in the iron and steel market that some thought would put a damper on business prosperity is going to work the other way around by encouraging more extensive building operations by reducing the cost of structures in which steel enters extensively.

THE adoption of a hundred pounds as a unit of measure by the National Lime Association ought to have the backing of every man in the lime business. It makes bookkeeping easier, the consumer just as well satisfied, and if you sell your lime in two-hundred pound barrels there is more profit.

THE lime industry has been a long time waking up to the idea of progress, but if there is any industry more widely awake to-day than this one we have not heard of it. Not only are the members of the trade wide awake, but they are pushing, and the association meetings are the most enthusiastic business sessions imaginable. There are a number of important questions before the lime manufacturers, and they are going at them with a will and energy that means their speedy solution.

THINGS are waking up in the machinery end of the stone industry at a lively rate. The stone men realize that the greatest way to encourage the use of more stone is to reduce the cost of manufacturing by the use of modern machinery. This inspires them to give ready attention to the new things in the way of labor-saving machines and appliances, and this in turn encourages the machinery man to invent new and better things, so with it all we may expect some rapid strides mechanically this year.

THE spring season, the big one of the year for roofing, will soon be on, and we are wondering somewhat how it is with the trade. Are the manufacturers of roofing figuring on handling more of their product through the retail dealer than formerly, or will they make efforts this year to go straight to the consumer as much as possible? It looks to us like the right road for most of the roofing to travel is that which takes it through the retailer's warehouse, but we would like to hear from the manufacturers on this subject.

THERE are already a number of good associations in the trades represented by this paper, but there is room for a few more, and right now, while the association subject is warm we want to make an appeal to those who are going along without the association spirit to get in line. Let us have proper associated effort in all branches of the trade, for it means better business for all concerned. If you want help or advice about forming an association in your particular line write this office and we will gladly give both editorial and personal help.

From Our Own

Correspondents.

GREATER NEW YORK.

NEW YORK CITY, January 26.—There is no change of any consequence in the building situation here, nor in the material line, except that of brick which still holds up very well.

Cement continues low, but it is expected that the market will be stimulated soon, because this year's building operations are looming up in good shape on the horizon.

Mr. W. H. Kirtland, 1123 Broadway, has now taken in the adjoining office which he will fit up as a show room for the colored marble which he is now importing. He is busy now with the specifications for some buildings, the work on which was stopped last fall, but which are now scheduled for completion this spring. The slate mills he represents are doing the best they can under the double adverse conditions of unfavorable weather and lax attendance of the men, who, in winter take any pretext, no matter how slight, to absent themselves. This causes much trouble and delay and substitution of other materials at the last minute, but even with this drawback he is quite busy.

The American Stone Co., of 1 Madison Avenue, has been reorganized under the name of The New York Cement-Stone Co., and retaining the same offices. The officers are Philip F. Barrington, president; Corydon T. Purdy, vice president; Louis H. Scott, secretary-treasurer. Mr. Barrington has been identified with large construction work in New York, Chicago and Boston. Mr. Purdy is of the well known firm of Purdy & Henderson, of New York, Chicago and Boston.

IN THE CLAY PRODUCTS TRADE.

Fredenburg & Lounsbury have removed from 1 Madison Avenue to 289 Fourth Avenue, corner of 22nd Street. They have larger and more convenient offices and are able to give themselves space which they lacked in their old quarters. They have a large show room which is devoted entirely to the exhibition of their front bricks, all the desks being now accommodated in the various offices. Mr. Fredenburg said that business was coming along in a quiet conservative way that betokened a good steady year. He felt that, the labor situation having now got worked into better shape, there was a stronger feeling of confidence all along the line and a fairly prosperous year may reasonably be looked for.

Mr. Chas. Siedler, 156 Fifth Avenue, said that things were looking pretty well just now. The demands for their white brick and terra cotta were coming in in a way that encouraged him to look for a good substantial year, and altogether the outlook was satisfactory.

Mr. R. C. Martin, 156 Fifth Avenue, said: "There is very little to be said of the brick market just now, but nevertheless the situation is not without interest in that we have reliable indications of a revival of building in the upper part of the Manhattan and the Bronx for residential purposes.

CEMENT, LIME AND PLASTER.

Mr. Corbett, of Sinclair & Babson, said the situation in the cement market, is very quiet now, of course, with the dropping off of so much building work, and the delaying of so much other construction work by the unfavorable weather. Nevertheless, the signs are encouraging for a good fair year in general lines, of which cement will undoubtedly get its share.

Mr. Joseph H. Loughman has severed his connection with the Atlas Portland Cement Co., and is now connected with the Consolidated Rosendale Cement Co., 26 Cortlandt Street.

Mr. Perry says there has been no change in the lime market and the Rockland-Rockport prices remain the same. Although things are necessarily slow now, yet Mr. Perry thinks from present indications as they shape themselves, that the coming season will be a good fair one. Mr. Perry says the Pittsburg meeting was an excellent one. It was well attended, very interesting, went off well and every one who attended got his money's worth.

Mr. T. D. Cone, of the National New Process Lime Co., left New York on the 17th to attend the Lime Manufacturers' Convention at Pittsburg.

James O'Connell is about to erect a hydrating plant on the O'Connell & Feely system for the Louisiana Lime Co., which will include two of O'Connell's patented boiler arch kilns, and Mr. O'Connell and Mr. Feely both expect to go at an early date to New Orleans to manage the work. Mr. O'Connell's near departure for New Orleans prevented him from attending the Pittsburg convention.

Mr. James Wotherspoon said there was nothing brilliant to be said about the plaster market this month. There is as yet no recovery of the market, and the price is fully as low as during December. February, another slow month, has yet to intervene before any reasonable safe prognostication can be made for the season, but still the situation is encouraging and one may fairly reckon upon a good conservative year.

AMONG THE MACHINERY MEN.

In the office of The Ruggles-Coles Engineering Co., 39 Cortlandt Street, there is a sand-lime brick made in the Indiana factory of the American Sand-Lime Brick Co. It is made with sand from along the Hudson, near New York. It is close, dense and so hard that the sharp edges yield no grit when rubbed, and with a face so smooth that it looks as if it had been worked to a polish. Altogether it is an excellent sample of a fine front brick.

The J. R. Alsing Co., 136 Liberty Street, has made an important improvement in the method of mounting their tube mills. The great value of it lies in the saving of power. In the new mounting the pulverizing cylinder rests on three main bearing wheels, one at each end and one at the center. The cylinder carries heavy rings at these points, which are held longitudinally by flanges of the bearing wheels The two ends of the cylinder are left free for the entrance and discharge of material, since there is no axle running through it, nor any bearing at either end. As the entire weight of the cylinder is carried by the three bearing wheels at the bottom, it is easily rotated by them, as the friction between the hoops and the wheels they rest on is more than ample for driving them, and so two of the wheels are driven by a connecting shaft. On each side of the bearing wheel is an idler wheel which is employed to keep the cylinder in place. These idlers are held against the rings on the cylinder by means of rubber buffers pressing against their standards, the amount of the pressure being capable of direct regulation by nuts. It has been in service long enough under different conditions to demonstrate its value as a method of reducing power requirements.

The Noys F. Palmer Manufacturing Co., of Brooklyn, is this week sending one of their cast-stone presses for the manufacture of hollow blocks to Evansville, Ind. A wood pulp company there has taken it to use in building an addition to their factory. This is a case of "seeing is believing," as the Evansville company bought it after seeing one of the machines in practical operation about fifty miles away in Owensboro, Ky.

The Alston Stone Sawing Machine Co., of 10 East 23rd Street, New York, is making very gratifying progress with the new straight-cut attachment, having sent it to several manufacturers in different parts of the country and receiving equal praise from all. One large stone manufacturer writes that it has increased the sawing capacity of the gang, on which it was applied, over 150 per cent. without any additional expense. The Alston Co. is prepared to put up entire plants equipped with this, and other improved stone working machinery.

As illustrating the interest taken by brick men and builders in the sand-lime brick industry, Mr. C. J. Curtin, Eastern agent of the American Sand-Lime Brick Co., 39 Cortland Street, reports that during the past thirty days he has received over sixty samples of sand from the vicinity of New York and Philadelphia, for testing with a view to the suitableness of the various locations for the installation of sand-lime brick plants. The company makes a liberal proposition to have all the samples so sent them made into bricks, free of expense to the sender, thus giving him an opportunity to learn quickly and accurately the nature of his sand deposit and its availability with reference to the manufacture of sand-lime bricks. If the bricks so made reach the standard required by the company for a first-class product, then they will agree to erect a factory that will turn out bricks—all of them of a similar grade and character to the sample they submit.

H. G. Kotten expects to put a number of new pneumatic machines on the market this spring which will reduce the cutting of stone very materially as to expenditure of both power and labor. At the present time his factories are being heavily taxed in getting out the orders now booked for spring delivery.

While in Patterson last week I was favored with a run through the "Wood" Rock Drill Co.'s plant there. It was a pleasure to see the number of machines, all of the latest and best patterns, every well known maker being represented there, and all doing their work so quietly and so well. Mr. Cory took great pride in his bright cheery plant and showed an especial, and pardonable, liking for some of the machines, patting one lathe fondly which "could do every thing except talk," and another which "could write your name ." From the machine room a step across the garden, now under a deep mantle of snow, brought us into the stock house where rows of drills were standing boxed and crated for shipment, and the shelves and floors were covered with a complete line of parts ready for immediate assembling. The "Wood" Drills are having an increasing success on the other side, and amongst the completed drills were some ready to go across the water and help to build up the good name of American machinery. If any of the ROCK PRODUCTS readers is addicted to fox hunting he can have an excellent reminder of that lively sport by sending to the "Wood" Rock Drill Co. for one of their catalogues which have a perfect representation of the head of one of those wiley animals.

CHICAGO.

CHICAGO, ILL., January 26.—Just as everybody is feeling like the sky is clear of labor troubles here another cloud has appeared, caused by the demands of the cement finishers. There are about 2,000 of these in the city, and they are asking an increase from the present scale of fifty cents an hour to sixty cents, to become effective April 1. At this writing the report is that the contractors have concluded to refuse the increase, and to also declare for the "open shop" policy, so there is every chance for a little trouble unless the union element sees fit to keep going along at the old rate.

Notwithstanding this cloud in the labor sky, and the feeling of general discouragement over this city's reputation as a hot bed for labor trouble, the contractors, architects and real estate men are preparing for a busy season in building operations, and the general outlook is very bright in this line. Building projects are especially active in the suburban towns around the city, and there are some notable buildings to go up in the city proper.

The trouble among the marble workers seems to be over, and the different marble mills of the city are getting down to work in good shape with the expectation of having a very busy season.

Business has been a little slow with the crushed stone men of the district lately, owing to extreme cold weather, still, work is progressing some, and as soon as warmer weather comes they will be making things hum again.

Lime and cement men, too, are suffering from a let-up caused by the severe weather, but the prospects ahead look bright, and they are taking things cheerfully.

The Western Stone Co. held its annual stockholders' meeting this month, at which President Martin B. Madden made the following report:

"The volume of building in Chicago was approximately $14,000,000.00 less in 1903 than in 1902, a corresponding falling off has resulted in the quantity of supplies furnished by producers and manufacturers of building material. In common with others engaged in the line, this company has suffered from the conditions named. Economical management has, however, enabled the reduction of the bonded debt, which at your last meeting were $272,000.00 to $262,000.00. The bills and accounts payable which at your last meeting was $63,449.24 are now but $16,994.99.

"The introduction of further economies now being put into force leads to the hope of better results for the future."

The recent lay-off among the steel workers of South Chicago did not affect the cement department of the Illinois Steel Co., which has continued running without interruption. One of the officers of the company, when seen in their offices in the Rookery said that they are now turning out 1,400 barrels of cement a day.

The examinations made among the ruins of the Iriquois theatre have developed strong evidence in favor of concrete construction, for it was found

that the concrete floors, and other parts of the structure made from this material, were practically uninjured in the recent disastrous fire.

Nick Lauer, of Douglass, Ohio, who is a progressive quarryman and understands his business thoroughly, was in town a few days ago on business.

J. J. Callahan, of the Callahan Road Improvement Co., Albany, N. Y., has been on a trip West looking after some of his interests in that direction, and stopped over in this city on his way back. His firm are large quarrymen and contractors. His father was one of the pioneer quarrymen of that State, and began crushing stone for road material thirty years ago. Mr. Callahan says the outlook ahead for crushed stone this year is very bright in his territory, both for concrete work and for railway ballast.

Mr. U. J. Sparks, of Mount Vernon, Ky., was in the city the past month buying machinery for a new crushing plant to take care of a contract he has with the L. & N. Mr. Sparks is already in the crushed stone, and in the lime business, so this is not exactly a new venture with him, simply a spreading out in his regular lines.

Another stone crushing man who was in town this month was Mr. H. M. Dalton, of Princeton, Mo., who was *en route* to visit his old home at Hopkinsville, Ky. He reports his plant at Princeton, which consists of a No. 8 and a No. 5 Gates breaker, with screens, elevators, etc. as ready to start just as soon as the railroad people are ready to take the product. He expects to turn out from 1,200 to 1,500 cubic yards of ballast a day, and has a contract with the Rock Island to take care of a large part of his output.

The Chicago Gravel Co is making some extensive improvements at its plant at Joliet, putting in new steam shovels, crushers and other up-to-date machines and appliances. This is one of the most progressive firms in the country.

Mr. Cobbe, of the Minnesoto Mining and Milling Co., Duluth, Minn., was a visitor in this city recently. His company has a rather unique business in the stone line; they mine and mill corundum, and have a plant equipped with Gates crushers, rolls, screens and other equipment necessary in reducing this material. The plant has a capacity of fifty tons a day.

The Allis-Chalmers Co. reports a fair amount of orders in hand for crushing machinery, and say that the stone crushing business is growing at a fair rate, and a number of new plants are now being projected in the West and South for this spring.

SYRACUSE.

SYRACUSE, January 25.—The National Wall Plaster Co., of America, has elected the following directors for the ensuing year: Charles S. Averill, Daniel O'Brien, Russell R. Stewart, Howard H. Lincoln, G. E. Baldwin, C. R. Locker and H. E. Dingley. Mr. Dingley, the manager, reports that the company has had a prosperous year.

Edward A. Kingsbury, of this city, who has been for several years superintendent of the Empire Portland Cement Co., at Warners, has accepted a position with the Hudson Portland Cement Co., at Hudson, N. Y. Mr. Kingsbury will be assistant general manager. For fourteen years he has been connected with the Empire company. His successor there has not been engaged.

The Paragon Plaster Co., is employing 10 per cent. more men than a year ago. It has added a new boiler and steam plant and a new 250 h. p. Corliss engine to its facilities. Officers have just been elected as follows: President, Jacob Amos; vice president, William K. Niver; treasurer and general manager, William K. Squier; secretary, William O'Connor. Directors: A. E. Nettleton, Charles Hubbard, W. K. Niver, Jacob Amos and W. K. Squier. The regular dividend was ordered payable February 1. William F. O'Connor, who has been with the company eleven years, is the new secretary to succeed William K. Squier, who is relieved of the duties of secretary to devote all his time to the offices of treasurer and general manager.

Adolph H. Schwarz who has been the manager of the W. K. Niver Coal Co., has resigned to take a position with the International Salt Co., of Scranton, Pa., and will move there.

Salt Superintendent H. H. Freeman has sent his report to Albany, showing that on the Onondaga Reservation during the year, 1,933,224 bushels of salt were inspected, which is an increase of 255,470 bushels over 1902. Superintendent Freeman says that the past season has not been profitable to those manufacturing salt, as prices have ruled low and the price for coal was fifty cents a ton more than in the previous year.

Great interest is being taken in a contract to move an eighty ton hardhead boulder intact from Split Rock, a distance of seven miles, to this city. The contract is for $4,500.00 and the work will be done by MacDonald, Cutler & Co., of Barre, Vt. The big boulder will be placed in Oakwood cemetery as a memorial to the late Jacob Crouse. The rock is much larger than the famous boulder which marks the grave of John Brown at North Elba in the Adirondacks. The only inscription on the rock will be the name of "Crouse." The railroad refused to handle such an immense weight and the scheme now is to build a special cradle on strong runners, and to move the boulder with thirty or more teams of horses.

A new pottery to be conducted by the Syracuse China Co., will be built in the West end of this city upon land owned by E. M. Klock. It is said that upwards of 500 people will be given employment. The concern will be capitalized at $150,000.00. F. L. Webb, Jr., is the promoter of the company.

The asphalt plant of Bayer Brothers, near the city limits in North Street, Auburn, was destroyed by fire last month. The flames were started by workmen trying to thaw pipes inside the building.

The Davidson Marble Co., of Watertown, has changed its name to the Watertown Marble Co. The capital invested now is largely Watertown capital, whereas formerly Chicago capital figured more prominently. The concern has been enlarging its equipment this fall and now has two new planers and other improvements. A large number of important contracts are now receiving attention. One of the largest of which is the interior marble work for the bank of Nova Scotia, at Toronto, Canada. The concern has for the past year been getting into the interior finishing business to a much greater extent than formerly. It is in fact making a specialty of this class of work and is meeting with a considerable and gratifying success in this field. Manager A. C Davie says that there is a probability that the plant will be greatly enlarged during the ensuing spring and summer, and the equipment largely increased. It is contemplated to double the capacity of the present plant.

G. R. C. Smith, of Potsdam, N. Y., recently exhibited some fine specimens of serpentine marble taken from quarries controlled by him in Vermont. The specimens shown were of different shades of green and some of them were like onyx. Mr. Smith also had a deposit of a mineral of a nature like talc, which is in demand for a new process fire proof building material, and he also had specimens of red granite.

Charles A. Davis, of Syracuse, a well known marble dealer, died at his home, No. 1601 Grape Street, a few days ago. The deceased was fifty-two years of age, and had been a resident of Syracuse for four years. He was formerly in the marble business at Fulton, N. Y.

The Geddes Coarse Salt Co. has elected the following directors for the year: Horace White, Horace K. White, F. W. Barker, Ernest I. White, and Andrew S. White.

The Lyons Stoneware Co., Lyons, has filed with the Secretary of the State, a certificate of incorporation. It is organized with a capital of $1,000.00 to manufacture eartnenware. The directors are: William H. Mapes, William S. Scott and George Mapes, of Lyons.

The Mohawk Valley Stone Co. has been incorporated and purchased a large tract of land opposite Cranesville, N. Y., and as soon as the weather will permit, a large crushing plant will be installed.

VERMONT.

POULTNEY, VT., January 20.—The Rutland Fire Clay Co. have leased the Chase Toy Works and are fitting it up as a first class plant for the manufacturing of fire clay.

The Taylors Talc Co. is getting out quite a large amount of the product from its mines in Moretown, Vt.

Large sheds and other buildings are being built as fast as men can be found to work, help being scarce.

John F. Bromley, of Granville, N. Y., is about to start a new quarry at that place.

Barder Bros. are about ready to start their new slate quarry and are now fitting it up with two Hooker elevator carriers.

The cold weather here has interfered with the work at the quarries, thermometers registering as low as 40 degrees below zero.

J. D. Buchmaster, of North Clarendon, Vt., has closed his slate quarry at Poultney for the winter.

There is some talk now among the slate men to be represented at St. Louis this year.

SOMEWHAT PERSONAL.

The Vaughn Construction Co. has been incorporated at Roanoke, Va., with a capital stock of $100,000.00, by H. L. Vaughn and others.

The Rockdale Lime Co., John C. Paxton, manager, Toms Brook, Va., favored us with a very neat calendar for 1904, on which is conveyed the information that they manufacture the celebrated Rockdale lime.

The Jeffrey Manufacturing Co., Columbus, Ohio, is sending out a yellow, red backed booklet, which tells about the Jeffrey grab bucket, which they claim is the most powerful bucket made for use in excavating gravel, clay, etc.

The Ingersoll-Sergeant Drill Co., 26 Cortlandt St., New York City, is sending out quite a unique calendar on which is illustrated their patent Haeseler Axial Valve in use doing structural iron work. There is also a life size patern done in red card board of the axial valve that shows how it is constructed.

The Slatington-Bangor Slate Syndicate, Slatington, Pa., of which James L. Foote is general manager, who claim to be the best, biggest and busiest slate people, have sent us one of the biggest calendars of the season. It is business-like all the way through and each sheet has a business message to their customers.

Houston Brothers Co., 32nd Street and Pennsylvania R. R., Pittsburg, Pa., are sending out a red letter circular letter giving reasons why cement people should buy paper bags instead of cloth, in which is set forth a number of arguments for paper bags for cement. If you want to know it, they will be glad to tell you about the matter on request.

We have received from the Lincoln Iron Works, Rutland, Vt., an elegant catalogue in which is illustrated and described their line of stone working machinery. The Lincoln Iron Works make a specialty of stone planers, rubbing beds, saws, etc., and have quite a variety of these machines, which are very neatly illustrated and described in this catalogue.

We have received from *Tonindustrie-Zeitung*, Berlin, Germany, a kind remembrance in the shape of a memorandum calendar and almanac which appears exhaustive and complete. We feel that there is quite a lot that can be said about it, but as our German editor is absent from the city, the will will have to be taken for the deed, until such time as he can digest it and tell us all about it.

The National Roofing Co., manufacturers of asphalt roofing and general roofing supplies, Tonawanda, N. Y., have favored us with a map of the United States, which, in addition to furnishing information about the United States proper, shows the proposed route of the Panama canal. The map is also designed to give an idea of the extent of the sale of their roofing. It is a neat wall map and is very much appreciated.

The American Sand-Lime Brick Co., 225 Dearborn Street, Chicago, Ill., has just issued a new neat catalogue in which is illustrated and descibed the American system of making sand-lime brick. This catalogue goes into the subject of sand-lime brick very extensively, both from a historic standpoint and the manufacture and quality of the brick, etc., and is nicely illustrated with cuts of machines and appropriate views of factory and factory surroundings.

The Hunkins-Willis Lime and Cement Co., St. Louis, Mo., have a perfect dream of beauty on their calendar. She is called "a debutante." She carries quite an element of sweetness, too, and in addition to this the calendar carries the information that the Hunkins-Willis Lime and Cement Co., are Southwestern distributing agents for the Atlas Portland Cement Co., and are manufacturers of Eureka lime, and United States sales agents for Best Bros.' Keene's cement, which they claim is a perfect plaster material.

Granite.

BARRE.

BARRE, VT., January 25.—Of course the mid-winter season is dull, so far as actual quarry operations is concerned with the granite men here, but there is no air of depression comes from this just now, because the granite men here have closed a very successful year, and the outlook ahead is quite rosy. The outlook ahead is for an excellent volume of business this year, and the quarrymen and manufacturers will start into the season well equipped for making things hum. There is no trouble in sight but the weather, and we know that the weather will get good some day.

The Barre Granite Manufacturers' Association has re-elected officers for the ensuing year as follows:

President, William Alexander; first vice president, John W. McDonald; second vice president, Willam Barclay, Jr.; treasurer, George Robins; secretary, James Campbell; executive committee, A. J. Young, D. H. McLeod, James Adie and Dennis Ryle.

Among the granite men who have had a busy year, is the firm of Barclay Bros., who during the past year turned out more monumental work than ever before, and expect to beat their record again this year.

Marr & Gordon, too, have had a successful year, and they are looking forward to another busy season.

McDonald & Buchan are in excellent shape for doing a big business in monumental work this year, and have just closed a very satisfactory year and feel good over the outlook.

Wells, Lamson & Co. have had a good year, and also have a number of nice orders booked to start in the new season on in heavy monumental and mausoleum work.

Mutch & Calder have some nice orders in hand, one of which is a large shaft of a monument.

C. W. McMillan & Son have several good orders on hand, and expect to have plenty to do the coming season.

Moore Bros. is one of the young firms in the district which has a bright outlook before it, and will enter the coming season with an excellently equipped plant for producing granite work.

Anderson & Sons start into the new year feeling good over the results of the past year and the outlook ahead. They have excellent material in their quarry and expect to have a busy time when the season opens up well.

QUINCY.

QUINCY, MASS., January 23.—The New Year has started adversely for profitable work in the granite industry of this city. Since the holiday recess trade has shown but little progress, entirely due to the rigors of an old-fashioned New England winter. On January 2, a blizzard of no mean proportions well nigh filled the quarries with snow and work in this branch of trade stopped. A cold wave of long duration soon had its effect on the manufacturer end of the business, and for days no work was done in quarry or shed. The excess of cold and snow to date has never been equalled and the shipment of spring orders will be greatly retarded.

The quarry owner and manufacturer were not idle, however. An accumulation of office work engaged their attention while the weather embargo was on, so that work on spring orders will continue uninterruptedly, as soon as the weather settles. Nor have orders for spring work fallen tardy off. During the month passed a bulk of work has been placed which promises well for the spring and summer season. When settled weather arrives and quarrying can be done expeditiously, the trade will experience a boom, the like of which has not been known for some years back.

Almost a year ago the subject of an exhibit at the St. Louis exposition was broached by the local manufacturers. Aside from being mentioned and the matter discussed no practical move has been made in the direction, and at this writing, it appears that Quincy granite, the best of its kind for monumental purposes, will have no place at the Louisiana Purchase Fair.

It is a matter of keen regret that the local product will not be on exhibition. Barre has planned an elaborate exhibit and when the returns arrive in the Vermont granite mart, the local manufacturers will be filled with remorse for allowing so excellent a chance to boom his ware to the thousands pass by the board.

L. L. Manning, of Plainfield, N. J.; F. A. Rendall, Auburn, Me., and J. K. Brown, Augusta, Me., were among those to visit the trade during the past month.

The shipments for the month of December make it possible to give the year's total at this writing. During 1903 the amout of rough and finished granite shipped from this city amounted to 130,003,678 pounds, which shows a slight falling off over the figures of the preceding year. In 1902 the shipments amounted to 135,337,557 pounds. December's total, 8,299,722 pounds, was distributed from the various depots as follows:

	Pounds.
West Quincy	3,882,040.
Quincy Adams	3,719,682.
Via Quarry R. R.	698,000.

MAINE.

VINAL HAVEN, ME., January 20.—The past season has been a busy one with the granite men in this section. The Bodwell Granite Co. has given its attention largely to the execution of their contract for the United States custom house in New York. It will require the company a year at least to complete the work upon this building. Other contracts which this company have completed during the year include an office building known as the Penobscot building, in Detroit, Mich., the Rockland Public Library, the completion and shipment of the huge columns for the Cathedral of St. John the Divine, New York, several vaults for Philadelphia parties, and a large portion of the Ram Island light house at the entrance of Portland Harbor.

The paving business has been fairly good the past season, shipments being quite large from the product of 1903, as well as from surplus stock carried over from previous years. More than 300 men are now engaged at this place and Spruce Head upon the New York custom house. Owing to the elaborate character of the carving which enters into the construction of this building, progress is necessarily slow. Some of the stones for the column capitals will require six months to complete.

J. S. Black, at his Dark Brook quarry, has turned out considerable dimension stock for the Portsmouth dry dock and the Ram Island light house.

The Bodwell Granite Company have made extensive improvements to their plant at the "Sands" during the year. A large building, 130 feet by 40 feet, on the ground, and two stories in height, has been built the latter part of the season. This building will be used for a machine and carpenter shop. It is now being equipped with the necessary machinery for the above purpose. A new traveling crane, and several surfacing machines have been added to the equipment and the works are now thoroughly complete and up-to-date.

A Study in Asphalt Paving.

(*Continued from Page 1.*)

Trinidad was 112,216 tons to the United States, 56,465 tons to Europe, and 2,290 tons to other countries. Of the total 170,971 tons exported, it is interesting to note that 136,054 were lake asphaltum and 34,917 were land asphaltum.

Natural bitumen from Bejucal, twenty miles from Habana, Cuba, has also been brought to this country and used as a basis for asphalt cement. At Tuxpan, Mexico, is mined an asphalt that has proven a fairly good paving asphalt, and is said to possess the advantage of being in such a condition as to be ready to make into the paving mixture without the aid of a flux. Imports of asphalt or bituminous limestone to this country come also from Neufchatel and Val de Travers, Switzerland, Seyssel, France, and small quantities from Germany.

Various forms of asphalt are found in the United States and have been used with more or less success, but, as not yet as general as the Trinidad, it is only necessary to mention them in connection with their use for streets. They are found as asphalts and bituminous sandstones and limestones.

As asphalts they are classified as the grahamites, gilsonites, wurtzilites, ozocerites, etc., as found in West Virginia, Utah, Indian Territory, Colorado and Texas; as bituminous limestone they are found in Texas, Utah and Indian Territory; and as bituminous sandstones in California, Missouri, Kentucky, Indian Territory, Texas and Utah. Bitumen of great purity occurs in veins in California, as well as in most of the petroleum areas.

A Peculiar California Bitumen.

One of the California bitumens called "liquid asphalt," is very peculiar in its occurrence. The mine is in the edge of the ocean, and the refined liquid asphalt is obtained by mechanical treatment from sands which have evidently come from the beach, although they extend some miles back from the beach and are higher than the beach. This sand is covered by a big deposit of earth and soil, which is washed off by the sea water, large pumps out in the ocean, giving the necessary pressure for hydraulicing. The sand which contains the liquid asphalt covers a shale that also is saturated with this material, and is probably the source of supply, although this is not worked to secure the substance. This deposit is about thirteen miles east of Santa Barbara, Santa Barbara County.

Near this same deposit is found a natural rock deposit of asphalt and this has been used with the "liquid asphalt" to make into a paving material.

In Kern County, California, crude asphalt was for a time mined, which, when softened by a flux, was used as a pavement. The Santa Cruz and the San Luis Obispo county bituminous sandstones of California are the most largely used for paving purposes, being quarried, broken considerably, hauled to the roads, there heated, spread over the road and rolled into place. These make fairly good and very cheap roads, but do not last long owing to the large amount of impurity and the ununiformity of the stone, some parts of which have not enough asphalt to cement the stone, therefore disintegrating and leaving holes in the road, while other parts being too rich in bitumen are too soft to stand the traffic. These sandstones are also made into paving blocks.

The value of this bituminous rock varies from $3.00 to $6.00 a ton, and the output for a year is limited by the demand and not by the supply. Excessive freight rates have prevented the common use of California asphalt outside of the State, but it has been used somewhat in Denver, Chicago, in Missouri, and to a small extent in the East. The use of the bituminous limestones and sandstones of the other States is also limited by this same cost of transportation.

In some places the asphaltum is extracted from the rock and sold as refined material.

How Asphalt is Refined.

Before these natural asphalts can be considered for pavement they have to be refined, a very simple operation which consists principally in driving off the water that is contained in the crude material. This is put into stills and heated to somewhere about 375 degrees F, seldom higher, and often to facilitate the operation, air is blown into the molten material to keep it in agitation so as to prevent the settling out of the impurities of the asphalt. These impurities in the Trinidad asphalt are mineral matter of about 33 per cent. of the refined product, and about 10 per cent. of organic matter, such as twigs, roots, grass and other carbon bi-sulphide—insoluble organic matter. The air passed through in this manner is not continued long enough to produce any change in the material by oxidation.

The Bermudez asphalt is received here in a refined state, and contains about 97 per cent. of pure bitumen in comparison with about 55 per cent. of pure bitumen contained in the Trinidad asphalt, and while the Trinidad contains from 6 to 10 per cent. of organic matter, the Bermudez contains but little over 1, and the mineral matter in the Trinidad amounts to 37 per cent., while the Bermudez has but from 1 to 2 per cent.

The Cuban asphalt after refining, that is, after heating to drive out the moisture and lighter oils, shows about 72 per cent. of CS_2 soluble bitumen, 4 per cent. organic matter, and mineral matter about 24 per cent., showing it to be midway between the Trinidad and Bermudez in composition. The unrefined material of the Trinidad lake asphalt is brought directly to this country by the Barber Asphalt Co., who control the entire output and refine it in this country.

(*To be Continued.*)

Monuments.

Get Acquainted.

We have just been reading an interview with a monument man who had been on a visit to the granite quarries from which he has been buying stock. He was enthusiastic over the trip, because it had not only been an interesting one to him, but he felt also that it would prove beneficial, for he got better acquainted with the men, methods and material at the supply end, and will, in consequence of this, and the fact that they got better acquainted with him at the same time, the business of the future between the quarrymen visited and that particular monument man will be carried on with a better understanding all around. And there is more to the idea suggested here than one might think at first. This thing of getting acquainted is a mighty good thing to do; it is one of the great benefits that come from meeting together at association meetings, and it is this seeing you personally that makes the man with things to sell send a traveling salesman around to see you, instead of depending altogether on correspondence—he wants to get acquainted with you and by personal contact get you properly acquainted with what he has to sell. When the retail monument man turns around and visits the quarryman it is but carrying this matter of personal acquaintance a step further, and it is an important step, so much so that we feel like urging on the dealers that it would be a good policy to figure on taking a couple of weeks vacation and personally visit the quarries from which they expect to get most of their material the coming spring and summer. By doing this you will get some positive knowledge of the facilities for supplying your needs, may get some pointers on new work that will repay you for the trip—and last but not least, by coming in closer touch with the producers you pave the way to some insurance that all material placed in your vicinity will be placed through the local dealer, and not sold direct from the quarry or wholesale manufacturing plant. Get acquainted is the idea, and it does not stop with your getting acquainted with the producer either; get acquainted with your competitors, and get acquainted on such a basis that you can all work together and not against each other.

Had Them Misrepresented.

The New England Monument Co., Beaver Falls, Pa.—We notice in your paper that you state we are agents for New England Marble and Granite Works. This is not true, and if some of those Eastern firms would see that they would think we were misrepresenting ourselves. There has simply been a small addition to the firm of Criswell & Fulmer, and we give it the name of the New England Monument Co., and we are agents for no one. We are thinking some of going into the manufacture of artificial stone for walks, cellar walls, steps, window sills and caps. Could you give us any information regarding how much it would cost to start? Any information you can give us will be thankfully received.

Mr. John Henderson has bought the monument shop of J. C. Davis & Son, at Lebanon, Ind., and it is said he will increase the facilities by adding pneumatic tools.

The shops of the Machias Granite Co., Machias, Me., were re-opened the first of the year, after having been closed a couple of weeks for the holiday season. The shops will be operated on half time for a while accumulating stock and working on some special jobs.

T. J. Edwards, the veteran marble and granite dealer of Dowagiac, Mich., has sold at interest in his business to Mr. Isaac Rutherford, who has been in his employ for fifteen years. The firm name has now become Edwards & Rutherford. Mr. Edwards retires from the active management of the business, which will be in charge of Mr. Rutherford.

Something of a Humorist.

Some people might get an idea into their heads from the nature of the business that monument men always wear a long, solemn face and never crack a joke, but that there is humor in the trade we have a shining example before us. We send from time to time hundreds, and may be, thousands of letters, asking for news so as to keep in close touch with the trade, and find that we quite frequently get the best results by putting this in the form of circular letters in which we ask specific questions and leave a blank for the answer.

The Hughes Marble and Granite Co., Clyde, Ohio, were recipients of a letter of this kind recently, and we give below the result in questions and answers:

Question—What is your special line of work?

Answer—Placing epitaphs on stone for the coming generation to read, for anyone who is able to pay our price.

Q—How is business with you and the outlook ahead?

A—Present business good. Outlook according to the old adage, a green Christmas, a fat graveyard. That makes the outlook bad, having had a white Christmas.

Q—Is there anything we can do to make things better for you?

A—Yes, send us your order for a $400,000.00 mausoleum.

Q—Is there anything worrying you in your business?

A—Yes, it is worrying us to think we can't get a fence around the earth, thus eliminating all competition.

Q—Is there anything you are in the market for at the present time, either in the way of machinery, supplies or materials?

A—Our draftsman is in the market for a wife. our salesmen are looking for orders, the foreman of our shop for trouble, and the writer for money. The company is looking for a pair of lathes.

Send us a little business. Can we have your order for a monument?

J. F. Coles has gone into the monument business at Omaha, Ill.

Myers & Murray, Woonsocket, R. I., have moved into new quarters.

Long & Hardy have opened up a marble shop at Mellrose, Iowa.

C. F. Patterson has entered the marble and granite business at Conneaut, Ohio.

The marble yard of E. H. Brandt, Lewisburgh, Pa., has been sold to J. M. Shindel.

W. H. Evans, of Cadiz, Ohio, has opened up a monument shop at St. Clairsville, Ohio.

The monument business of S. M. Clark, Mattoon, Ill., has been purchased by G. W. Emerick.

P. R. Cadell has succeeded to the monument business of J. T. Drummond, at Bradford, Ill.

Henry L. Salladin, Utica, N. Y., has a contract to furnish a number of soldiers and sailors headstones.

The firm of Robertson Bros., marble dealers, at Auburn, N. Y., has filed a petition in bankruptcy.

Jones & Reasoner, Anthony, Kan., have been adding machinery to their equipment for stone work.

It is reported that Burr Bros., of Barre, Vt., will establish a granite cutting plant at Des Moines, Iowa.

Chas. G. Blake, Chicago, Ill., has secured a contract for a mausoleum to cost $80,000.00, at Delevan, Wis.

The monument business of J. C. Hare, Hartford, Mich., has been purchased by Asa Simpson, formerly of Benton Harbor.

The monument business of Mitchell & Baldwin, Zanesville, Ohio, has been purchased by Frank B. Fell and A. B. Osler.

The monument business of A. W. King & Co., at Galva, Ill., has been purchased by A. B. Smith, formerly of Toulon, Ill.

T. G. Schraeder Sons' Marble and Granite Co., has been incorporated at St. Louis, Mo., with a capital stock of $20,000.00.

The C. E. Tayntor Granite Co., Hallowell, Me., has among other contracts on hand one for a mausoleum to cost $28,000.00.

The Tayntor Granite Co., Hallowell, Me., has secured the contract for the soldiers' monument to be erected at Pittsfield.

The marble works of Mr. Suter, which was formerly Suter & Auringer, at Neligh, Neb., has been sold out to Auringer & Coleman.

The Elberton (Ga.) Granite Works seems to be enjoying a very busy time and their business is growing at a very healthy rate.

H. H. Ceagelski, proprietor of the marble works at Merrill, Wis., is figuring on opening up a marble and granite works at Monominee, Mich.

Wisconsin is arranging to appropriate $30,000.00 for erecting a monument at Vicksburg, Miss., in honor of the dead soldiers of the Civil War.

The M. & M. Marble and Granite Works, is the name of a new concern formed by G. A. McClintic and J. B. Matthews at Grand Junction, Colo.

Herman E. Leuthe, proprietor of the Wabash (Minn.) Marble Works contemplate adding pneumatic tools to his equipment in the near future.

Kavanaugh Bros., Boston, Mass., have moved to Quincy, Mass., where they have erected a new building near the stand of Kavanaugh Bros. & Co.

Mr. Carl Price, proprietor of the Kenton Marble and Granite Co., Kenton, Ohio, has bought new property in that city and is figuring on building larger works.

Mr. A. R. Finnell has retired from the business of the Illinois Monumental Co., Hillsboro, Ill. The surviving partner, Mr. F. M. Young, now conducts the business alone.

H. F. Wenrich, Oshkosh, Wis., has completed a new addition to his plant ihwch will be used for a show room. It is said to be quite an elegant show room, the finest in the State.

The Litchfield (Ill.) Marble and Granite Co. has elected officers for the year as follows: T. C. Kirkland, William Barefott, William Wiegraffe, S. M. Grubbs and A. F. McEwen.

George W. Maltby & Son, who are located on Maryland Street, Buffalo, N. Y., have the contract to build the McKinley monument at that place which will amount to something over $90,000.00.

M. B. Root & Son, monument dealers of Ottumwa, Iowa, have engaged Mr. C. B. Granger, who is an experienced marble and granite man, as salesman and will likely push the business extensively this spring.

Frank T. Bauhof, Wellington, Ohio, has associated with himself in the monument business Mr. L. A. Williams, and the firm will now be known as The Wellington Granite Works.

C. M. Neal, of the Punxsutawney (Pa.) Marble Works, has been on a visit to the marble and granite quarries of Vermont and Massachusetts the past month to purchase a stock of marble and granite.

The Butte (Mont.) Tombstone Co. has been incorporated with a capital stock of $20,000.00. The incorporators are: H. Hazelton, Missoula; James Welch, Jefferson County, and Julia Welch of Butte.

The Ottumwa (Iowa) Cut Stone Co. has purchased ground and will erect shops and show rooms for the manufacture and sale of marble and granite for monuments, cut stone and interior work. The manager is N. N. Naugle, a well known stone dealer of that place.

The Hagerstown Granite Works, H. A. Theyer, proprietor, Hagersville, Ont., Canada, forwarded us a copy of a recent issue of their local paper in which we found the following item of interest in stone circles: "The assistant engineer and two other civic officials of Toronto, were here last week inspecting the Bluestone Quarry with a view to purchasing large quantities of crushed stone to be used as a binder on the streets. It is regarded as greatly superior to the material at present in use in the Queen City."

The monument works of T. H. Wildman, Tuscaloosa, Ala., were destroyed by fire December 28. Mr. Wildman writes us that he lost his building fixtures and a considerable amount of finished marble. However, nearly all his rough marble and tools were saved and he continued work with but one day's interruption. He says that the loss by fire has not interfered with him in regard to meeting bills promptly, and he is able to meet all obligations with the usual promptness. He is getting in good shape again with his orders.

Cement.

CENTRAL CEMENT MEETING.

Progressive Cement Men of the Middle West Held a Session at Chicago, January 19, With Cheerful Results.

Beginning January 18 there was a busy week in association work among producers of stone and rock products in Chicago, and around the Grand Pacific Hotel there were swarms of people all week interested in some one of these lines. There were cement men, quarrymen, and cut stone men, galore, and all were bent on association work, and were there to meet their competitors in the same line.

The big day for cement was January 19, when you could have talked with practically every cement manufacturer whose plant is located West of Pittsburg, for they were practically all at the Pacific Hotel in attendance at the meeting of the Central Cement Association. The officers of the association are: B. T. Becker, Newaygo Portland Cement Co., Newaygo, Mich., president; Charles F. Wade, Omega Portland Cement Co., Janesville, Mich., secretary-treasurer.

This association originally consisted merely of a group of Michigan manufacturers of Portland cement, who became imbued with the social spirit and organized an association to meet occasionally and exchange ideas on the various problems confronting the manufacturers from time to time in the Portland cement industry, and to discuss market conditions and seek ways and means to push Portland cement along broad gauge lines.

The good coming from these meetings suggested that greater good might be done, not only to themselves, but to their neighbors in Ohio and Indiana, by all meeting together, coming to know each other better, and exchanging ideas. In time this matter was taken up among the Portland cement manufacturers in Ohio and Indiana, and the majority of them have become affiliated with this association. The further success of this wider affiliation begot ideas of a re-organization on a still broader line and a modification of the constitution of the original association so as to extend the scope of the purposes of the organization.

In taking this matter up with the different manufacturers in the Central West the officers found it in accord with the ideas, and as a result of this, a committee were appointed to take the matter in hand and were advised that when they were ready to report, another meeting would be called.

The attendance represented all sections of the middle West, and a good meeting was had, with a free exchange of ideas and general comparison of notes for the good of all in the trade.

There were several important matters under discussion, not the least of which was getting an exact outline of the present situation in the Portland cement industry. There was a compiling and review of statistics relating to the amount of cement manufactured the past year, the amount imported, the amount sold, the amount still on hand in the different parts of the country, and also a report of what the manufacturers contemplated producing throughout the present year.

The question of the consumption during the present year was also touched on, and at least half of those in attendance took part in the discussion, which was very lively and animated at times, but the spirit of good fellowship prevailed throughout.

The matter of more uniform specifications on contracts for the sale of Portland cement was also taken up and discussed but no definite action was had on it.

Among other subjects discussed was that of freight rates and Eastern quotations.

A number of ideas and results took concrete form from these free discussions, some of which are given herewith.

It seemed to be the unanimous opinion, as expresed by all present, that in view of the facts brought out not one of them would quote a price on Portland cement for future delivery until there is some material change in the cement market. From this we may deduct without any lengthy argument that the conditions in the cement industry are not such as to warrant the continuation of present low prices. In fact, the majority of the manufacturers attending the meeting left feeling confident that the cement industry, both East and West, is in a much better condition than they really thought it was before coming to the meeting and comparing notes.

One of the direct results of this meeting was the getting together of two manufacturers who operate in the some section, and have not been in harmony heretofore. As a result of coming to the meeting and discussing things freely with manufacturers from all parts of the country, they have come to realize the advantages of being on friendly relations with each other and will both reap the benefits in the future.

Among those who at various times took an active part in the discussions were the following: L. M. Wing, of the Wolverine Portland Cement Co., Coldwater, Mich.; John Monaghan, of the Alpena Portland Cement Co., Alpena, Mich.; J. R. Patterson, of the Peerless Portland Cement Co., Union City, Mich.; John A. Myers, of the Aetna Portland Cement Co., Detroit, Mich.; Charles Johnson, of the Castalia Portland Cement Co., Castalia, Ohio; O. O'Donnell, of the Buckeye Portland Cement Co., Bellefontaine, Ohio; A. St. J. Newberry, of the Sandusky Portland Cement Co., Sandusky, Ohio; Edw. M. Hagar, of the Illinois Steel Co., Chicago, Ill., and Carl Prusing, of the German Portland Cement Co., Chicago, Ill.

President Becker was called away during the day, and Secretary Wade presided during a part of the session.

After the session was over the delegates adjourned and enjoyed a nice informal luncheon at which about thirty were present.

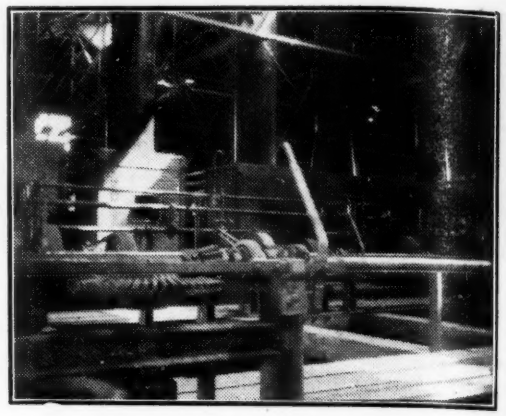
The date and place for the next meeting was not set, but is left subject to a call of officers.

Many of the delegates returned home immediately after the meeting was over, but some took advantage of the trip to look after business matters in Chicago, spending an extra day in the city for that purpose. Among those who staid over were Messrs. Myers, Patterson, Wade and O'Donnell. Mr. O'Donnell spent several days among the machinery men selecting and purchasing some machinery to add to the equipment of his plant. Among the additions will be an apparatus for fire protection at the plant of the Buckeye Portland Cement Co.

Mr. Patterson is something of a Western land promoter these days, and things are coming his way at such a lively gait that if you want to know "who hit Billy Patterson" you will have to catch him on the fly.

B. T. BECKER.

The Pacific Portland Cement Co., San Francisco, Cal., has secured a contract to furnish 30,000 barrels of cement for the irrigation work in Northern Nevada. This, it is said, is the first cement contract to be placed under the new irrigation act.



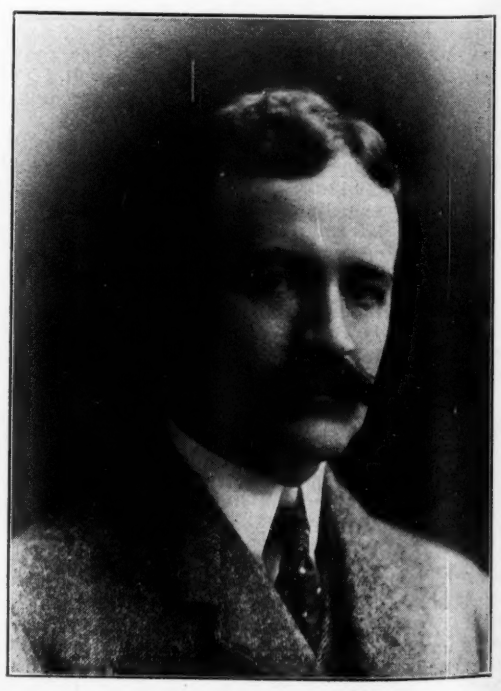
An Interior view at the Plant of the Egyptian Portland Cement Co.

A Modern Michigan Cement Plant.

One of the recent cement plants of Michigan, which started up last summer, is that of the Egyptian Portland Cement Co., at Fenton, Mich. The builders of this plant, which started in with a capacity of 1,000 barrels a day, sought for the most modern plans and appliances to be had for decreasing the amount of labor required in the works, practically all of it being a matter of automatic mechanical operation. The plant was installed under the supervision of Robert W. Hunt & Co., of Chicago, Ill., and is built after what is known as the wet or slurry system. The slurry plant and tanks for storing the marl slip and corrected cement slurry are immense concrete vats which are supplied with slurry or blunging devices. The illustration printed herewith shows a section of the top of these cement slurry vats, and also gives a view of the top or driving part of the stirring devices. One of the interesting features of this plant is the fuel end of it, which is supplied with a Gates crusher for the primary reduction of coal, which is further reduced by tube mills. The powdered coal is then handled by a blower system. The roasted clinker is reduced by two tube mills and four ball mills. The rotaries were built by Reeves Bros., of Alliance, Ohio, and there is also a dryer made by the C. O. Bartlett Co., Cleveland, Ohio. A corliss engine is used to furnish power for the plant and rope transmission is resorted to instead of belts.

The following buildings constitute the plant: Mixing and rotary room, 215 feet by 100 feet; boiler and engine room, 185 feet by 60 feet; warehouse and grinding room, 200 feet by 90 feet; clay storage, 120 feet by 50 feet; coal storage, 100 feet by 50 feet; office and laboratory, 50 feet by 50 feet.

The officers of the company are: Geo. A. Foster, president; J. F. Williams, vice president and general manager; C. B. Shotwell, secretary and E. D. Kennedy, treasurer.



CHAS. F. WADE.

Artificial Stone

Some Concrete Block Questions and Answers.

A leading manufacturer of concrete block machinery has favored us with a copy of a letter received by him bearing on the subject of concrete building blocks, and also his reply, and as this letter and reply contain matters of interest on this concrete block question, the subject matter is produced herewith. The letter is from a Government inspector and reads in part as follows:

I believe the time for concrete construction is about here, yet there are serious objections raised by brickmakers, bricklayers, and stone masons and cutters here which have kept the concrete business back in this city; that is the *porosity* and consequent great absorption of water, which results in damp house.

This difficulty overcome, the demand for concrete blocks would certainly be good. To put the question briefly, the concrete block is in direct competition with a smooth surfaced, pleasing colored, and practically waterproof face brick. The concrete block for residence house purposes must be made at least nearly as waterproof as the brick referred to before it can become popular here. It is my opinion that concrete with less cement than sand will not keep water out, this would make the block commercially unprofitable, and I am not sure even if that proportion would make it water tight. The technical journals recommend dry lime mixed with the cement in a dry state as a remedy for this difficulty, I do not know how efficient this would be.

In your opinion could clay in sufficient quantities be introduced into the mix to fill the pores without injuring the strength of the material, or any other substance that you know of, whether in the mix or after the material is set? This is a question to my mind that deserves the attention of the best intelligence that can be brought to bear upon it.

From the reply made by the concrete block machinery man to this letter we quote the following:

"What you say in regard to hard brick and its porosity is correct, but I have failed to find in the market any front, or back brick that is any more impervious to dampness and climatic conditions than a concrete hollow block made 1-3-3. It is a well known fact that the strength of a brick wall is more in the cement mortar used than in the brick itself; and that if brick were not porous the mortar bond would be defective. Glazed or vitrified brick will chip and break off in a climate changing 30 degrees between morning and night. To get strength to brick walls for height of structures, the base and width must be increased, and the cement of these wide walls is doing more of the work of holding up the load than the brick. I witnessed a test made by the N. Y. Building Department on front brick samples, and the engineer in charge will confirm my statement, that there was little uniformity to the tests. A brick test standard is an *unknown* quantity in trade, and has a general reputation dependent only on the cement, and the architect's skill.

"A hollow concrete block is never damp on the inside, unless it is combined with back brick laid in damp weather. Dampness in the front must pass through the thin partitions, and before it gets all through the dry air in the capacity dries up the surplus moisture attempting to creep in. There is no question of this fact. Cheap blocks, that are waterproof, can be made at little extra cost. Pressure 1,600 pounds to the square inch will not make a more dense concrete than hand ramming. The open press and top tamping is the trick, that can not be improved on, any more than a molder at the flask in the foundry could do away with similar methods. The element of safety in a concrete block, so far as 'tensile' and 'compression' is concerned, is so great that clay, cinders, wet sawdust, and even old brick bats, can make a building block 1 to 5, or 1-2-4, that would be of sufficient strength for a three-story building. Therefore what you ask about 'clay' is only a by-play with by-products. In fact, the whole building block fake patent craze has feasted and fussed into foolishness only because 1-9 has been used and advised, and this bad advice, to make money on patent sales, is the problem I have tried to overcome; 1-3-3 makes a stronger block than 1-4 as tests have shown."

Commending the Schwarz System.

The sand-lime brick question is one which has been receiving a fair share of attention in these columns right along, and it keeps growing and calling for more attention.

Just now the Schwarz System Brick Co., New York City, desire to call attention to an illustration which shows a building with 100 living rooms, dining room, etc., at Kiel, which was built of sand-lime brick made by a factory equipped with the Schwarz system. This picture was secured by the courtesy of Mr. T. E. Pratt, a civil engineer of Red Bank, N. J., who made a trip to Germany to investigate the sand-lime brick problem, and in this connection has written to the Schwarz System Brick Co. the following letter:

"Owing to the confused state of affairs in this country of the sand-lime brick industry, I concluded to go to Germany, its birth place, and there, where all systems have been tested and sufficient time has elapsed to show their weaknesses as well as their good points, go to the bottom, completing the investigation which I began in America.

"I first saw at Bremen the U. S. Consul, Mr. Henry Diedrich, who had thoroughly investigated this industry for a report to his Government. He advised me to examine the plant which he had found employed the best systems and were known for the excellence of their product. I accordingly visited the Audorfer Land-und Industrielle Gesellschaft at Rendsburg, and Struve & Co.'s plant at Kiel, both working under systems now being introduced in America. And any and all other systems now being introduced in America I found were not even known there.

"As a result of this investigation and for the benefit of any who might wish to enter this excellent field, I unhesitatingly recommend the Schwarz System, which is employed in the Audorfer plant.

"The plant was using two Schwarz preparing machines which had been running three years, the only repairs being for new plates on the mixing blades, which they renew once a year at slight cost.

"I found the product of the factory was giving good satisfaction to many large users who had abandoned the use of clay brick for those made of sand and lime. The buildings built three years ago of these bricks were found to be in the best of condition.

"As a conclusion, I believe it impossible to make sand-lime brick better than those made by the Schwarz system. Every brick was perfect in size, color and mixture.

"Yours truly,
"T. E. PRATT."

More About the Fisher System.

Fisher, the concrete man of Memphis, Tenn., is always turning up something new about the artificial stone business and bringing out some new improvements in the line of processes for this work. We are advised that he has just received notice of the allowance of further patent claims on his system which makes him feel good.

He has a number of testimonial letters from men who have erected plants to operate with his system, which indicate that they are doing good business, and are well pleased with the results. One of the concerns who seem to be making good progress with the Fisher system is the Monmouth (Ill.) Hydraulic Stone Co.

Mr. Fisher is issuing a circular in which he states that after long experiments he has perfected an instantaneous sand dumping device or box, of which he has the following to say:

"This box receives the pressure while in the steel frame of a massive hydraulic press, and while receiving this pressure (filled with a loose mortar) it shapes and condenses the material in any design desired by the operator; when it has received pressure enough and the shape is obtained, it locks and remains thus locked after the pressure is turned off and the steel frame of the machine automatically thrown open. The boxes in this form are taken from the machine, conveyed to the curing bed where they are instantly unlocked and removed from the material, leaving the material in a shape obtained while in the press sitting on a sand bed. The practicability of this method is of the greatest value to cement blocks, as it lies on this sand bed (this bed of sand should be thoroughly wet before the blocks are placed on it) and the fresh stone lying on this damp sand will gather moisture from underneath, which greatly increases the strength of the stone. Having all of the sides exposed where they can receive a proper sprinkling of water, the cement is given free action to solidify. If laid on pallets, board or iron plates, as all other systems are curing their material, a certain portion is prevented from curing proper by not receiving the amount of moisture required by the cement; therefore the value of the stone is lessened and weakened, and I wish to call your practical attention to the facts above mentioned.

"All of the blocks under Fisher's Hydraulic Stone System are driven together by hundreds of tons of pressure, joining together each grain of sand and cement, and with proper curing we solve the mystery of nature's own production of strong and durable stone. We make hollow blocks, angular blocks, window sills, door steps, curbings, copings, sidewalk blocks, blocks the size of common brick, sewer pipe, imitation of marble, which are condensed, as above stated, and are instantly placed on a curing bed."

Cost of Concrete Construction.

It may be of interest to note the cost of concrete construction as shown by the work on the Buffalo-New York breakwater, which was in charge of Emile Low, of the United States engineers' office at that point.

The cost of loading or handling the material was 17.4 cents per cubic yard. The cost of mixing was 12.9 cents per yard and the cost of the work on the wall, tamping, etc., was 14.6 cents per cubic yard for labor, independent of power and raw material.

The proportion was, cement one part, gravel one, sand grit two and unscreened broken stone four, and a bag of cement was considered to be 0.9 of a cubic foot.

Prominent Structure at Kiel built of Schwarz System Sand-Lime Brick.

Lime.

Swindell System for Burning Lime and Cement With Producer Gas.

At the recent meeting of the Lime Manufacturers' Association held in Pittsburg, Pa., the burning of lime with producer gas was a much discussed question among the members.

William Swindell and Bros., of Pittsburg, who are advertising a patent system of burning lime and cement with producer gas, presented the members with a neat pamphlet, giving interesting data, and showing cuts of the producer and combustion burner; the gist of the pamphlet will be interesting to all lime and cement manufacturers.

William Swindell and Bros. are pioneers in the furnace and producer business, and their long experience in the iron, steel, and glass trades has made them well equipped to take up the question of gas for lime burning with Mr. H. P. Dodge, of the Toledo White Lime Co. in October, 1902. They contracted with this company to equip one kiln as an experiment. The first installation was made in April, 1903, and the kiln started on May 15, 1903. The success of this kiln was remarkable from the start, the uniformity of the burn, the quick action of the combustion on the limestone greatly increasing the output of the kiln, and effecting a saving in fuel over old methods without increase of labor. The three adjoining kilns were then fitted up with Swindell patent combustion burners and the gas pipes extended from the one gas producer, which was found to be ample in capacity to supply the four kilns. The same results were obtained in the operation of these three last kilns as with the one already mentioned. The equipment of four more adjoining kilns was ordered, installing at the same time two additional gas producers to provide sufficient gas capacity, not only for the four kilns, but for additional kilns to be built. The entire eight kilns have been in operation for the past five months.

Mr. Dodge states that there is an increase in output over the old methods, which is given by Swindell Bros. as sixty-five per cent. Nnmber nine kiln is now being equipped, and Mr. Dodge is confident that this kiln can be operated without additional fuel or increase in labor. Taking into consideration the increased output, the poor quality of coal now used in the gas producers compared with the fuel required for coal fired kilns, Swindell Bros. expect to effect a saving in fuel of forty per cent.

The grate bar cost is entirely eliminated, and the brick in the kilns are uninjured, two points in economy worth noting.

The flame in the kiln is clear, under perfect control and can be lengthened or shortened at will. It is practically uniform in temperature, and the conditions are said to be ideal for burning limestone, not only increasing the capacity of the kiln, but greatly improving the quality of the lime, which Mr. Dodge states is equal to wood burned lime.

The system can be readily applied to present kiln construction without making any changes in the kiln proper. This can be done at a very moderate expense considering the great advantages obtained.

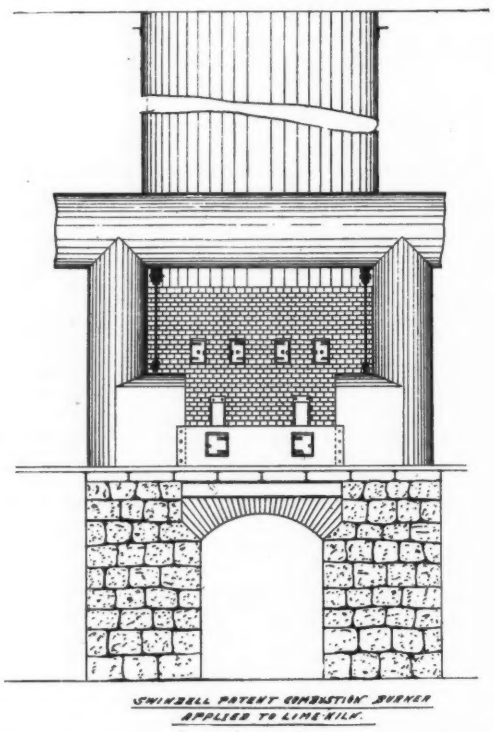
William Swindell and Bros. have placed in operation at the Diamond Portland Cement Co., Middlebranch Ohio, a system for burning cement in rotary kilns. The results obtained, they say, are equal to any obtained with powdered coal, and the expense of pulverizing and power plant is not required. The regulation of the heat in the rotary kiln is under perfect control, and a number of lime manufacturers have this question under consideration for burning fine limestone, the results of which will be awaited with interest on the part of all lime manufacturers.

The Druecker Lime Works, at Druecker, Wis., are to be enlarged by the construction of a battery of six new kilns, and the old kilns are being remodeled. Joseph Morrow Druecker is general manager of the works, and it is said that they already have quite a number of contracts on hand for next year, and intend to push things energetically.

Pointers on Lime Burning.

(SECOND PAPER.)

Kiln construction should vary with the size of the material to be used in burning, with the kind of fuel to be used, with the method of firing adopted. For economy's sake, the cooling chamber should always be ample, and as much of the air for distribution as possible, pre-heated by being drawn through the lime in the cooling chamber, preferably by being drawn through air chambers surrounded by heat from the cooling lime. It is probable that a grate-bar surface of one-half the area of a cross section of the stack space at that point will somewhere near fill the bill. The height of the kiln may vary between 25 and 45 feet above the grate-bars. With the use of coal, it will usually be desirable, at least when crowded for output, to use either forced or induced draft of some form, induced draft being more desirable even when using the Eldred system. It is probably desirable to use very small quantities of steam at all times, unless the nature of the fuel is such that steam is introduced with the fuel, since the use of steam lowers the temperature at which the carbon dioxide leaves the lime-stone. However, any large excess of steam will be false economy, on account of the high specific heat of water. Aside from this, a large excess of steam might result in fire slacking of the lime, which would be undesirable, of course. For



SWINDELL PATENT COMBUSTION BURNER APPLIED TO LIME KILN.

natural draft, a rather wide, low kiln will probably give the best results. For forced or induced firing, the high, rather narrow kiln will be found far preferable.

The Fuel Problem.

While we have as fuels, wood, oil, coal and natural gas in some sections, we have come down at the present time, to conditions where coal, in most sections, is the only practical fuel. In considering the fuel problem, three things must enter: quality of the product, cost of fuel per unit of lime burned, and cost of labor per unit of lime. One cord of hard wood, air dried, will produce 87 to 100 bushels of lime. A barrel of Lima oil will make 37½ to 38 bushels of lime. 1000 cubic feet of Ohio natural gas will make 7¼ to 7½ bushels. A ton of bituminous coal burned with natural draft will make 150 to 155 bushels. One ton of good bituminous coal burned with small amount of steam, and induced draft, in a properly constructed kiln, may be made to yield 155 to 175 bushels of lime. The cost of labor will be about one-half cent per bushel greater when using wood than when using oil or gas. Labor cost, when firing with coal, will be from one-fourth to one-half cent per bushel greater than when using gas or oil, with a little steam and induced draft. But to the latter must be added the cost of steam and power for blowers. The main gain of induced draft or the use of oil or gas, is in the increased capacity of the kiln, rather than in the increased economy in production. The capacity of a kiln can probably be increased from 10 to 20 per cent, or even 25 per cent. in some cases from the use of coal and natural draft, by the introduction of modern practice.

Gaseous coals are best for lime-burning. A very large output may be obtained from a kiln with natural gas as fuel, but owing to the high intensity of the flame with natural gas, it must be used with great care in order not to over-burn the material. It seems that wood furnishes a peculiar kind of flame which seems best adapted to the production of a good lime. This may be in part, due to the fact that with any of the other fuels, a certain amount of sulphur is bound to be carried in. But with good bituminous coal, if we know just what is desired, we can probably so modify our flame and combustion conditions, as to, in a large measure, duplicate that of a wood fire. In order to get at what must be done in order to accomplish this, we must try to locate what the fundamental properties in a wood fire are which makes it a desirable fuel. A composition of wood, air dried, as it is ordinarily used in lime burning, is approximately 40 per cent. carbon and 40 per cent. of hydrogen and oxygen, in the proportion necessary to make water when completely burned, and 20 per cent. hydroscopic water. This yields a long flame of low intensity.

Some Comparisons.

Making a comparison of a large number of fuels on a basis of 100 parts carbon, we find a varying quantity of hydrogen associated with it, in each fuel.

	(Parts.) Carbon.	(Parts.) Hydrogen.
Natural gas	100	35
Rock oil	100	19
Combined water and producer gas from bituminous coals. ¼ oxygen required supplied by steam; balance by air. 100 lb. coal, 20 lbs. steam, 200 lbs. air.	100	14
Producer gas	100	8 to 9
Wood	100	12.18
Coal (bituminous)	100	6.12
Coal (anthracite)	100	2.84

Good Points of Gas Fuel.

From this, it is seen that a producer gas, or water and producer gives gas nearer to a wood fire than any of the others. The hydrogen being of an extremely high intensity, it is desirable that too much free hydrogen or hydro-carbons, should not be present. On the other hand, a certain amount is very desirable, because the product of the combustion of hydrogen is water, and if the gases can be carried into and burnt among the limestone lumps, that water will be generated by combustion, right at the desirable point. Owing to the fact that the intelligent use of oil with steam has produced a good product, and that wood has produced a good product, we might say that any fuel ranging between a ratio of 10 carbon to 2 of hydrogen, and 10 of carbon to 1 of hydrogen would be a desirable heating agent for the lime industry. With the use of gas producers, there should be no difficulty in managing these fire conditions. A number of the large plants in the United States are to-day experimenting with gas producers for the manufacture of lime, and it is as yet an open question as to whether the increased output and probably increased quality of the product, and slightly less labor cost, will more than counter-balance the small amount of heat which must of necessity be lost in radiation, from the gas producer. The time will probably come when the gas producer will be built partially within the kiln wall supports, and in this manner reduce the losses due to radiation.

We trust that those experimenting with gas producers may keep careful and detailed records of procedure and results obtained as well as composition of the gas used, and present it to the public so that comparisons of cost of production may be made and the advisability of such procedure may be determined fully, once and for all. S. V. P.

The Farnum-Cheshire Lime Co. has been incorporated with registered office at 15 Exchange Place, Jersey City, N. J., with a capital stock of $250,000.00. The incorporators are: Cornelius J. Curtin, Louis Focht, and Edward S. Savage.

The Peerless Lime Co., Kantner, Pa., has just completed new kilns. The officers of the company are: Charles Betz, president; Jefferson Lape, superintendent; Jack Sipe, secretary.

The Kansas City Hydrated Lime Co., has been incorporated at Kansas City, Mo., with a capital stock of $25,000.00. The incorporators are: Walter S. Hamwell, D. P. Thomas, M. Thomas and others.

Meeting of the National Lime Manufacturers' Association at Pittsburg.

It Was the Most Enthusiastic Meeting in the History of the Lime Industry and Brought Home to All Conviction That Associations Pay Dividends.

THE DAY BEFORE.

The day before the meeting, found twelve or fifteen enthusiastic members of the National Lime Manufacturers' Association at Hotel Henry with their sleeves rolled up, ready to gather in information by the armfuls, and to give it out by the scoop shovel full. This early gathering of the clan could do not but presage a very enthusiastic meeting.

In the forenoon there was a little informal gathering in C. W. S. Cobb's room, but while there was a great deal of enthusiasm it proved insufficient to overcome the low temperature in the room, and an adjournment was called to a later time and a warmer location.

Shortly after luncheon all got together in a room provided for the occasion and held a conference on the hot air problem and the use of gas producers. Those who had had experience spoke freely. While some who had early tried this method of burning had met with indifferent success, they did not stand ready to condemn the practice as impracticable. They rather gave the impression that their failures had been due to imperfect equipment and a lack of understanding of the principles which govern in the production and combustion of producer gas. Most had worked along the lines which had been developed by people who desired a very high heat—temperature away beyond that which is desirable in lime manufacture. None had difficulty in making gas, but all had had trouble with conduits filling up, and with over or dead burned lime. Mr. A. Newton was bantered more or less about his experience with producers.

Early in the afternoon Mr. A. H. Lauman introduced Mr. Bradley, of the Duffs Patents Co., of Pittsburg, and the questions that were not put to him were not worth asking. He remained in the sweat box for a couple of hours and took it good naturedly. When Mr. Bradley was ready to depart it was learned that Mr. Swindell, another gas producer man, was down in the lobby and Mr. Lauman again kindly consented to introduce him also.

He was put through sort of a cross examination also, but little beyond what has been stated above was brought out, except that each party has a plant running and making lime successfully, but neither had accurate figures to give as to the cost, nor would they agree to burn lime at a specified price dependent on cost of coal.

The afternoon was an exceedingly profitable one to all present. Practically every phase of the gas producer problem and its possibilities was gone over.

Mr. Byron Case, of the Ohio Lime Co., gave his experience with gas producers as used in the manufacture of glass and he said each industry and each plant had to study out its own proper adjustment of flues, dampers, etc., in order to get best results.

During the discussion Mr. Bradley said that in the beginning the only thing he had feared was that there would be trouble in getting the gas to flow freely from the producer in among the stone, but when they started there was no trouble at all from this source, and plant had gone off smoothly from the start.

FIRST REGULAR SESSION.

The second annual meeting of the National Lime Manufacturers' Association was held at the Hotel Henry, Pittsburg, Pa., January 19, at 10:30 o'clock. President Newton was in the chair.

After the roll-call he spoke of the work of the association and the good accomplished during past months and urged that a committee be appointed on information to be distributed to the trade at large; that is, work that would be of benefit to the trade at large in the improvement of their methods, etc.; An Arbitration Committee to take up disputes between sections or individuals, and a good Local Organization Committee to take up the work of pointing out the advantages of local organizations in sections where they are not existing, but perhaps working along individually. This would insure greater prosperity of the trade, and increase the interest in the association as well.

Speaking of the pleasant co-operation of the members, he said that he felt he could point with pride to the increased membership, and work done by the association, especially mentioning the whole-hearted interest of the individual members.

Secretary Defebaugh then spoke, saying that his office had worked hard endeavoring to increase the membership, urging every lime man in the United States as far as possible each month, and constantly keeping one thing before them, that is, the necessity of good organization, and urging them to become one of us. The fact that we have eighty members to-day when we did not have an organization a year ago speaks for itself.

Speaking of delay in getting out the minutes of the last meeting, he said that it was due to various conditions for which no one particularly was to blame, and urged that more dispatch in handling minutes for this year and placing them before the trade in an attractive form, be exercised. He spoke of the number of sales to members, and urged that every member of the association could afford to have a number of books on hand for distribution to employees to give them a better comprehension of methods in business. He spoke of the detail work which is essential to the success of any organization, and thought that to this should be given the credit of the success of this one. Seconded the recommendation of the president concerning local organizations, and urged that not only the officers, but the individual members co-operate to bring about this end, and the further placing of business on a better standard.

He thanked the officers for their courtesy and the individual members for their promptness given

CHAS. WARNER.

to requests for information and other matters necessary for the betterment of the association and its members.

Treasurer Cobb then made a report that showed a balance on hand at meeting in June last of $374.97; receipts since then, $215.00; making a total of $589.97; expenditures for stationery, postage, etc., $188.06; leaving a balance of $401.91. Commenting on this report he said that there were several bills in the hands of the secretary that had to be paid from this balance. He urged the increase of the membership fee and annual dues from $5.00 to $10.00 so as to give the association plenty of money to carry out matters which have been in mind from time to time in order to further the interests of the association.

At the suggestion of the treasurer, an Auditing Committee was appointed to audit the books. Mr. Newton appointed J. S. Stevens and Peter Martin. They shortly reported the books to have been carefully and satisfactorily kept, and that the figures tallied with the books, and the report was very satisfactory. On motion of the committee, the report was copied and spread on the minutes.

The next thing in order being the election of officers, Mr. George B. Christian named Mr. Newton for president. Mr. Newton demurred, saying that one year was enough, and while he did not wish to shirk his work, thought it would be better for another member to be named from this capable body of men.

Mr. H. P. Dodge nominated Mr. Charles Warner, one of the hardworking members of the association and an Eastern man, saying that as the West had had the office for one year, he thought the East should be represented. This nomination was seconded by Mr. Stevens, Mr. Cobb and others. Mr. Newton asked that his name be withdrawn in favor of Mr. Warner for president.

Mr. Warner was elected to the office by acclamation for the ensuing year, the secretary being requested to notify the gentleman of his election, and one or two of the members spoke of the thorough interest Mr. Warner had taken in this organization, and his absence was due only to death in his family.

Mr. Peter Martin, of Huntington, Ind., was elected vice president by acclamation as well as Mr. O. F. Perry, Rockland, Me., second vice president; Mr. W. B. Hill, Kansas City, Mo., third vice president; Mr. C. W. S. Cobb, St. Louis, Mo., treasurer; Mr. E. H. Defebaugh, Louisville, Ky., secretary. The secretary cast the ballot for the officers, with the exception of himself, the president casting that ballot.

The committees were then called for hydrated lime and bulk lime, and other reports were deferred on motion until a later session.

Mr. Sutliff then moved that a committee of five be appointed on membership to report at the next meeting. Vice president Martin having taken the chair suggested that this matter be referred to the president. He suggested that Mr. Peter Martin and J. C. Paxton be added to the Committee on Publication which was changed from the committee now in force, to the Publication and Information Committee.

On motion the secretary cast the ballot for the re-election of the directors as they had served for the past twelve months, viz: J. C. Paxton, Woodstock, Va.; R. H. Cobb, Anniston, Ala.; W. S. Sutliff, Fostoria, Ohio; G. B. Christian, Marion, Ohio; A. H. Lauman, Pittsburg, Pa.; T. E. Fleischer, Sheboygan, Wis.; A. L. Beck, Huntington, Ind.; F. P. Hunkins, St. Louis, Mo.; Homer Sly, Bay Shore, Mich.; D. D. Christie, Toronto, Can.; F. O. Gulley, Johnson, Ark.; H. P. Dodge, Toledo, Ohio; A. G. Morris, Tyrone, Pa.; O. F. Perry, Rockland, Me.

On suggestion the program was changed to give Prof. Wheeler the most of the afternoon, and O. F. Perry read a paper on hydrated lime.

Mr. Perry took up the subject of development in the manufacture and use of hydrated lime, pointing out how it is entering largely into the manufacture of plaster and regaining some of the ground that lime has lost to gypsum in the past, and also cited other uses in which it is making good progress. He discussed the subject of manufacturing, giving his opinion as to the best process for hydrating lime. He also pointed out the danger of working the price of hydrated lime too low, calling attention to the fact that it requires quite an expensive plant to make this product, and it should bring a price that will bring some returns for the investment.

This paper was followed by a general discussion on the subject, and then the meeting adjourned for dinner.

AFTERNOON SESSION.

The afternoon session which was presided over by Vice President Peter Martin, of Huntington, Ind., was given over to the reading and discussion of interesting papers pertaining to all the different phases of the lime business.

There was first a report of the secretary of names of new members which had been received during the day, after which the meeting heard read a paper entitled "Two and Two Make Four," by W. S. Sutliff, Fostoria, Ohio.

Mr. Sutliff started off by discussing individuality in man, and showed the necessity of a man being something as an individual in this world and making his individuality felt. He also told of natural and artificial laws which tend to make all men follow the same line, and said that by these laws, people as they grow older and wiser, are drawn nearer to each other, notwithstanding the individuality, no matter how distinct it might be. In the wind-up he shows that two and two make four by putting them together, and the moral of it all is for men of the same line of business to get together,

for there is plenty of room for all to travel together along certain lines without in any way hampering or smothering individuality.

He incidentally touched on the subject of agricultural lime, pointing out that his company, the Seneca White Lime Co., was the first to market any amount of this agricultural lime. He showed the broad spirit that he has always displayed, which means the giving and receiving of information, and invited any and all to come and see how they do it.

As his paper turned somewhat to agricultural lime, some disposition was manifested to enter into further discussion on the subject by the members, but before taking up the discussion, the chair introduced Professor H. J. Wheeler, Chief of the Rhode Island Agricultural Experiment Station, who delivered an address on "Agricultural Lime With Tests."

Before formally presenting his paper, Mr. Wheeler made a short talk on the growth in the use of lime as a fertilizer in the United States, and said that while those in charge of experimental work had made efforts to furnish information, the great growth in the use of lime as a fertilizer was due to the efforts of the lime men and their emissaries, who have been actively pushing it the past few years. He said that this pushing of lime was a good work which should be done intelligently, and manufacturers should not seek to encourage the use of lime on land which does not require lime, because the future success for lime as a fertilizer is in having it used where it is needed. He pointed out that the work of the experiment station came in here by furnishing information as to where, how and when to use lime to the best advantage.

In his paper, Mr. Wheeler went into the details of the history of the work done at the Rhode Island Experimental Station, which has unquestionably done more to demonstrate the possibilities of fertilizers than any other one station of the country. He told of the early efforts and the discouragements and failures met with for a time, and followed it up with the history of how they had kept carrying on the work until they successfully demonstrated where, how and what plants lime could be applied to to advantage, together with actual tests and results which had been obtained and the numerous conditions they had experimented with. It was not only theory, but facts he dealt with, and he had charts and figures to show the actual results which had been obtained. With these he furnished a fund of information on the subject of agricultural lime of inestimable value to any one interested in this subject. He pointed out the plants that are injured by lime as well as those that are benefited, he told of the different manners of applying lime, and showed the different results, and also gave an outline of the kind of soil needing lime and the amount of lime required, results that might be expected and when to expect the benefits.

This paper was followed by quite a lot of discussion on the various points brought up, one of which was that of lime in the different States, fresh, hydrated and air slaked. The question of how to apply the lime to the soil came up, and was discussed at some length, especially on the point of drilling it in with grain as compared with sowing it upon land and working it in before the crop is planted.

On this point there was some difference of opinion between Mr. Wheeler and Mr. Sutliff. Mr. Sutliff pointed out that they had obtained such good results from the use of their lime by drilling it right in with wheat and oats that they had a standing guarantee in their circulars that from 1,000 pounds to a ton of fresh burned lime could be used to an acre, put right in with the seed, with the exception of growing corn and millet, and they would pay all damage that resulted.

Then a member raised the question that Mr. Sutliff handled a lime running high in magnesia which might make a difference on this point, but Mr. Sutliff took the stand that the magnesia had the same caustic properties as calcium carbonate.

Then the comparative costs of lime and other fertilizers per acre was brought up, together with the matter of certain States not permitting the use of lime as a base for commercial fertilizers.

The question of applying lime along with the seed coming up again, Mr. Sutliff explained at some length how one of the directors of the Ohio Experiment Station used lime with a Superior drill, manufactured in Springfield, Ohio, with a special attachment for putting lime into the drill furrow just behind the drill point carrying the seed.

The question of when to apply the lime for best results was discussed at some length, too, Mr. Carson pointing out that at times farmers do not buy lime as freely as they should, because they claim they can not get results soon enough as compared with commercial fertilizers.

Mr. Wheeler pointed out where results might be obtained quickly where one felt willing to spend the time and labor, but was inclined to the belief that it was far more advisable to use lime year after year, and get the results the second year.

One of the most interesting features of the discussion turned on the question of fresh, hydrated and slaked lime, and this was brought up again and discussed at some length by a number of members, as well as by Mr. Wheeler. The question was not entirely disposed of, either, but the discussion brought out a number of ideas of value to the members of the association, as did also the question of how frequently to apply lime.

At the end of the discussion a vote of thanks was tendered Professor Wheeler for his valuable discussion on this subject.

The next paper before the meeting was one of "Statistical Records," by Mr. Walter S. Sheldon, Hamburg, N. J. Mr. Sheldon started out by saying that in discussing the subject of statistical records, as manufacturers we are all agreed that the premise that the manufacturer must have a detailed knowledge of his daily operations, and also that knowledge must be accurate. He pointed out that it would be too sweeping to be just for him to say

W. B. HILL.

that the lime business in the past has been conducted on a basis of general results, but he said that he felt in most cases that lime manufacturers had not been reducing their operations to the exact scientific basis as other articles manufactured, such as iron, steel and cement.

Then on the question of statistics in general, he pointed out that it would be a very easy matter to get into the statistical habit to such an extent as to get up such an elaborate system of statistics as to be confusing. He said it was just as important to have the statistics of the business simple and easy of access and apprehension, as it was to have the statistics, for otherwise the burden of an elaboration would defeat the real purpose of the statistics. He then went on to show how he had devised a system for keeping the statistics of their business before him at all times on a card index, so that he could tell what any or all steps in the process of manufacture was costing. He showed that he managed to keep a record that answered his purpose on five little cards, and went on to show how he did it, giving the subject of each card, showing how the information was tabulated from time to time. With these five cards he said he was able to tell at any time the exact proportion of cost of each part of the process of manufacturing lime, from the quarry to the sale and delivery to the customer.

The talk of Mr. Sheldon was followed by some discussion, and a number of members asked him questions about some points in the system, and others told of various difficulties they encountered in their efforts to keep a line on the different branches of the work. One of the greatest problems seemed to be that of the pay roll, and keeping an exact division of time, so that the right proportion of the pay roll could be charged against the different branches of the work. It was pointed out that some time a man worked a few hours in the quarry and then was called to the crusher plant and lime kiln for a part of the day, and all this leads to more or less confusion, but several ways of keeping it all straight were brought out in the discussion following Mr. Sheldon's paper.

A vote of thanks was tendered Mr. Sheldon for his paper and a motion was made that the cards sketched out by him, showing how he kept his statistical record be made a part of the records for the benefit of the members, as the subject was considered so important that it was felt this information would be of great value to the trade.

At the close of the discussion the meeting adjourned until 7:30 p. m.

EVENING SESSION.

The evening session was called to order at 8 o'clock, and the first business before the meeting was a motion to fix the annual dues of the association at $10.00, which was carried by a unanimous vote.

Secretary Defebaugh introduced Mr. Peter Martin, of Huntington, Ind., as a modern Moses, to talk on the question of the "Desirability of Association Life in the Lime Business," who presented a very interesting paper on the subject taken from life as he had found it.

Mr. Martin is the pioneer in association work in the lime business, and he gave a history of this work from the time he first went into the lime business in 1876 to the present day, and pointed out how and by what means these associated efforts had been the main stay and source of profits in the lime business. He pointed out how the jealousies had been wiped out, and how the manufacturers who had been benefited had come to realize the good that could be accomplished by all pulling together in a friendly way, even in a limited territory, and he brought all this to bear to show how much good could be done by associated effort of broader scope as represented in the National Lime Manufacturer's Association.

From out his experience he gave, too, some good advice on how to conduct association work, pointing out that little difficulties would creep in from time to time, but these should not allowed to discourage the good work, for as long as all hung together and worked in the right spirit the result would be beneficial to one and all.

Mr. Martin was asked several questions at the conclusion of his paper, how certain difficulties that came up in association work are disposed of, which he explained for the good of the cause, after which a motion of thanks was tendered him for his paper.

The next thing on the program, was a paper on "Quarry Work," by Mr. A. A. Stevens, of Tyrone, Pa. Mr. Stevens went into the matter of quarrying in a thorough manner, covering the matter, from stripping the ledge of stone to the lime kiln, pointing out, first, how matters had been facilitated by the use of steam drills, until the man who to-day uses the hand drill is certainly behind the times. Steam drills were in time followed by the air drill, which in his opinion has quite extensively driven the steam drill out of the quarry, not so much because of its being cheaper in point of power, but because of other incidental advantages. He gave actual figures on the work a man can do with a good air drill as compared to hand drilling, and also touched on the subject of plug drills for breaking down rocks in the quarry as compared to hand methods, and suggested that electricity might some day cut quite a figure in quarry operations in relation to drilling.

After the subject of drilling he treated the matter of blasting at some length, showing the best methods according to their experience, the kind of explosive found the most satisfactory, etc.

Then he took the question of cars as a means of delivering stone to the kilns, saying the days of the horse and cart are pretty nearly of the past, and described the style of car they found the most satisfactory in the work.

The quarry tracks came in, too, for treatment, and the ideal quarry superintendent was pictured, together with methods and ideas, and benefits that come from a free exchange of ideas and suggestions by the members of the trade.

The paper was both interesting and valuable, particularly so as it went into actual figures taken from actual quarry operations.

It was followed by some discussion on the subject of plug drills, and it developed from the interest shown that quarrymen are taking hold of the plug drill idea quite actively.

The question of relative merits of steam and air for operating drills also came in for discussion, after which a vote of thanks was tendered Mr. Stevens for his paper.

Mr. Stevens then brought up the matter of burning lime with gas, especially as practiced by the Toledo White Lime Co., of Martin, Ohio, and called on Mr. Dodge, of that company, to tell about their experiments with the Swindell patent gas producers. Mr. Dodge said that they had been operating these processes six or seven months, and as far as he could see it had been a complete success, increasing the capacity of their kilns and offering some saving in fuel cost. He said that there are some weak points in the system at the present stage, but they expect to have them straightened out soon, and also pointed out if they were to start in to build a new equipment that they would be in a position to avoid some of the mistakes in their experiments, because of what they have learned in these experiments.

This question of producing gas for fuel for lime kilns brought out quite a lot of discussion, and it was expected to have a paper going into details of this subject by Mr. W. H. Bradley, of the Duffs Patent Co., Pittsburg, Pa., but from some cause he was not present.

William Swindell & Bros., of Pittsburg, Pa., had issued a circular on this subject illustrating and describing their gas producers for lime kilns, etc., which furnished interesting food for thought, as well as considerable light on the subject.

Mr. Dodge went into the details of their experiments with the Swindell gas producer, giving the cost of equipment and cost of operation, and also, as stated before, pointing out the little mistakes they have made which could be easily rectified in a new plant, and showing what he thought could be done in the line of economy by the use of such a system.

Mr. Perry, of Rockland, was also called on for something on this subject of gas producers. His firm have been using them for about a year and a half, and he gave a full account of their experiments, and said he felt that they got better lime from burning with gas than they do from burning with coal.

Mr. Sutliff told of his experience in the use of natural gas for lime burning, and then there was some further discussion on gas and gas producing by different methods, together with the kind and cost of coal necessary for this work.

At the close of this discussion, the subject of local organization was brought up and discussed at some length, it being the concensus of opinion that local organizations should be formed in various districts under the general guidance of the National Lime Manufacturers' Association.

Then came the question of where and when to meet next, and on this some took the stand that one meeting a year should be enough, while others contended that the association should continue to meet twice a year. The advocates of the one meeting a year thought that by too frequent meetings, the interesting matter for discussion might soon become exhausted, consequently there would be a lack of interest in the association meetings. But, inasmuch as each succeeding lime meeting has proved more interesting than its predecessor, there seems to be no danger of exhausting the interesting subject matter which may come up before association meetings.

The fuel question is quite a lively one, which is only in its infancy at present, and it was felt that there could be a lot said for the good of the trade on this subject after experiments under way have continued for another six months, and have added thereto additional experiments and information that may come to light in that time.

The question of local organization will also come up for definite decision in that time, and altogether the outlook is for a meeting then that will be even more interesting than the present one, which was certainly good.

After quite a lot of discussion about when and where to meet, it was finally decided to meet next time at Detroit, Mich., the second Tuesday in July.

After the time and place had been settled, Mr. Stevens suggested that the next meeting be made a ladies meeting to the extent that as many as possible bring their wives and families along, and his suggestion met with hearty approval.

Before the final adjournment the question of adopting the 100 pound weight as a unit of measure in selling lime, came up for discussion, and Mr. Sutliff moved that the association adopt the 100 pound unit. It was pointed out that a committee had been appointed to work on this matter, but had not been able to bring it to a satisfactory termination, because the co-operation of all manufacturers had not yet been secured. Inasmuch as this committee had not been able to carry out the purposes for which it was appointed, it was, on motion, discharged from further duty, and the association proceeded to consider the question before the full meeting.

After quite a lively debate on the subject, the motion to adopt the standard of 100 pounds in bulk as a unit of measure instead of the old form of a bushel, was carried.

There was then some questions asked in regard to printing the records of the meeting, and some letters were read by the secretary, after which the meeting adjourned to meet again at Detroit, Mich., July 12.

PETER MARTIN.

THE ATTENDANCE.

ALABAMA—J. B. Adams, Longview Lime Works, Longview.

ARKANSAS—Phil H. Daurnheim, Rogers White Lime Co., Rogers.

CONNECTICUT—H. E. Lyle and Wallace Canfield, New England Lime Co., Canaan.

ILLINOIS—A. Newton, Marble Head Lime Co., Chicago; C. M. Lauritzen, Raymond Bros. Impact Pulverizer Co., Chicago; Wm. A. Haarte, Austin Mfg. Co., Chicago.

INDIANA—Peter Martin, Western Lime Co., Huntington.

KENTUCKY—E. H. Defebaugh and S. V. Peppel, ROCK PRODUCTS, Louisville.

MICHIGAN—C. Z. Pate, Petoskey.

MISSOURI—W. B. Hill, Ash Grove White Lime Association, Kansas City; C. W. S. Cobb and Mr. Carter, Glencoe White Lime Co., St. Louis; F. H. Hunkins, Hunkins-Willis Lime and Cement Co., Phil H. Daurnheim, Chas. W. Goetz Lime and Cement Co., St. Louis.

NEBRASKA—F. K. Mayne, Davis & Mayne, Blue Springs.

NEW JERSEY—A. E. White and Walter Sheldon, New Jersey Lime Co., Hamberg.

NEW YORK—Thos. D. Cone, National New Process Lime Co., New York; F. C. Lauer and J. H. Hamilton, Rochester Lime Co., Rochester.

OHIO—Lawson Moores, The Moores Lime Co., Cincinnati; Byron Case and J. W. Urschel, The Ohio Lime Co., Toledo; W. S. Sutliff, Seneca White Lime Co., Fostoria; H. P. Dodge and H. H. Brand, Toledo White Lime Co., Toledo; George E. Christian, Jr., The Norris-Christian Stone and Lime Co., Marion; C. A. Burgess, Ingersoll-Sergant Drill Co., Cleveland; D. F. Urschel, Woodville Lime Co., Woodville.

PENNSYLVANIA—A. A. Stevens, American Lime and Stone Co., Tyrone; A. H. Lauman, Standard Lime Co., Pittsburg; T. K. Morris, A. G. Morris, Tyrone; W. L. Heisey, High C. Lime and Stone Co., Rheems; S. S. Walton, Steacy & Co., Wrightsville; S. E. Brainard, Edwin Bell Co., Pittsburg; Wm. Swindell, Wm. Swindell Bros., Pittsburg; J. King McLanahan, Hollidaysburg; A. H. Neal, Martinsburg Limestone Co., Pittsburg.

RHODE ISLAND.—Theodore S. Wright, Lime Rock; H. J. Wheeler, Rhode Island Experimental Station, Kingston.

TENNESSEE—C. H. Young, Cumberland Stone Co., Cumberland.

VERMONT—John P. Rich, Swanton Lime Works, Swanton Junction; W. B. Fonda, St. Albans.

VIRGINIA—J. C. Paxton, Rockdale Lime Co., Tom's Brook; S. W. Shoop, Front Royal; Wm. E. Carson, Carson Lime Co., Riverton.

WISCONSIN—T. E. Fleischer, Sheboygan Lime Works, Sheboygan; Kohlhagen & Inglese, Sheboygan Falls.

SNAP SHOTS.

The Modern Moses was a real live one.

The New England delegation was an earnest one.

The only Christian present was as handsome as ever.

S. E. Brainard, the cooperage man, of Pittsburg, was in demand.

Ex-President Newton made a trip East preceding the convention.

W. B. Hill of Kansas City, accompanied by his wife, made a trip East.

Lawson Moores was looking after information and was willing to give up some.

Thos. D. Cone, with his Toledo and New York pleasant ways, was a welcome attendant.

The Martinsburg Limestone Co., which was represented by A. H. Neal, will soon have a new plant completed.

The Ingersoll-Sergeant seven-footer with his melodious voice and his fund of yarns was heard among the lime men in the lobby, Mr. C. A. Burgess, of Cleveland, Cincinnati, New York.

Charles Warner, the newly elected president, was unable to be present at the meeting, but on being informed of his election, wrote us as follows: "I wish to take the opportunity, through the medium of your paper, to express to all the members of the National Lime Manufacturers' Association, my deep appreciation of the honor conferred on me in their recent election at the Pittsburg meeting. I can only say that the election was a source of great surprise to me, and I hope that the association will not suffer too much as the result of the action. Our association is only in its infancy, but I look on it as well started, and backed up by the very best element in the lime manufacturing industry. There are many things yet to be done in order to round up our work in a more thorough and systematic manner, and I earnestly request that every member of the association who has any views to express, will write me fully concerning their views, so that we can collect everything of value to help promote our work."

The Organization of a Cut Stone Contractors Association.

Leading Lights of the Cut Stone Trade Met at Chicago, Organized an Association and Enjoyed the Hospitality of Local Quarrymen in the Evening.

Grand Pacinc Hotel, Chicago, Ill., January 20.—For a year or more past, ROCK PRODUCTS has sounded the tocsin to the cut stone men that there was only one thing to do and that was to form an organization for protection, co-operation, and the improvement of the business.

Mr. Henry Struble and other Chicago cut stone men were of the same opinion, they being in close touch with this business, and made up their minds a few months ago that the thing must be done. The Pittsburg people who had gained the friendly information and co-operation of the Chicago cut stone men were of the same opinion. The result of their efforts brought many others to the same idea, and the result was that Mr. Struble called a meeting at Chicago on this date, and twenty-one cities were represented by proxy or in person. The cities represented were: Galesburg, Peoria and Joliet, Ill.; Milwaukee, Wis.; Pittsburg, Pa.; Chicago, Ill.; Toledo, Ohio; St. Louis, Mo.; Omaha, Neb.; Kansas City, Mo.; Bedford, Ind.; Brooklyn, N. Y.; St. Paul, Minn.; Minneapolis, Minn.; Detroit, Mich.; Washington, D. C.; Denver, Colo.; San Francisco, Cal.; Newark, N. J.

The enthusiasm in the breast of every man who came made the association a sure thing.

The first session of the meeting was called to order at 10 a. m., and continued, with the exception of a few minutes for allowing the cut stone men to talk shop, until it was time to put on their white neckties for the banquet, which was prepared by the Chicago quarry owners.

Among the things discussed was, "First, to get an Organization." C. H. Isele was made temporary chairman and Henry Struble, secretary. Committees were appointed, constitution and by-laws, objects of the association and other matters of interest were discussed by members of the Cut Stone Association which was to be, and now is. And the loud, shrieking infant was ushered in—this association, which will do more for the trade in one year than its members individually have been able to do in ten.

The objects of this association are to promote and protect the interests of its members and further the use of stone as a building material; to use their united efforts to cheapen the cost of cut stone so that it may be used in preference to substitutes; jointly to meet labor as local conditions can best be served, always treating labor fairly, believing in arbitration and conciliation; to encourage the formation of associations of cut stone contractors, all in strict conformity with the constitution and laws of the United States, but there is no intention, nor shall there be any action on the part of the association to control or in any way to deal with prices or restrict competition.

THURSDAY MORNING SESSION.

The reports of the committees were heard, and among them was that of the Nominating Committee. The following officers were elected to serve the ensuing year: President, Chas. H. Isele, Peoria, Ill.; vice president, George Dugan, Bedford, Ind.; second vice president, R. E. Haarsch, Chicago, Ill.; secretary, Henry Struble, Chicago, Ill.; treasurer, J. W. Melville, Pittsburg, Pa.

Executive Committee—S. W. Lederer, St. Louis, E. F. Giberson, Brooklyn; Fred Andres, Milwaukee; Albert Shaw, Omaha; Peter Gray, Philadelphia.

Among the number of matters of special interest to members, several were discussed which will be furnished to those in the association; and the cut stone man who is not a member should be.

It was 5 o'clock before the meeting adjourned and the executive committee held a session afterward; so this new baby is landed as a real, live thing. If you don't get a letter from Mr. Struble shortly, setting forth reasons for joining the association, you should write him one, or if you will address one member in the list of people at the banquet, you will be filled with enthusiasm and join at once.

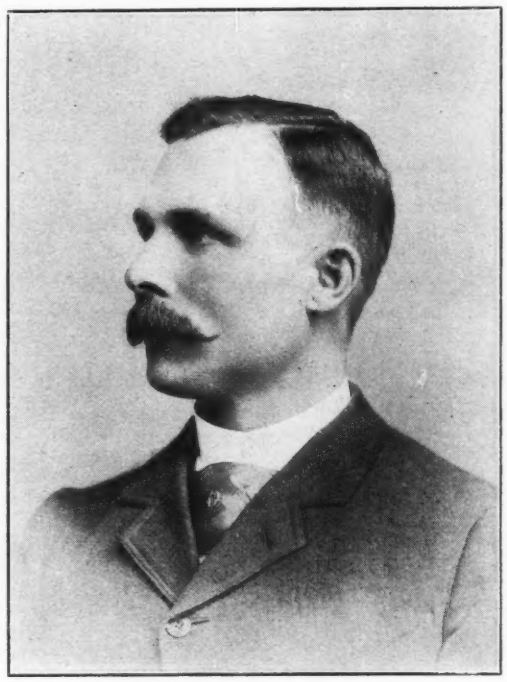
The discussion of methods and machinery will be the means of improving methods, and while putting more profit in the pocket of the cut stone man, will insure a more stable price to the customer.

THE SOCIAL SESSION.

Where the Quarrymen Were the Hosts and the Spirit of Good Fellowship Prevailed.

A banquet was given to the cut stone contractors at the Grand Pacific Hotel by the local quarry interests, the hosts being The Bedford Quarries Co., 204 Dearborn Street, represented by A. E. Dickinson; The Ohio Quarries Co., represented by W. N. Thornberg; The Portage Entries Quarries Co., represented by James W. Ward; The Perry-Matthews-Buskirk Stone Co., represented by C. W. Walters; The Cleveland Stone Co., represented by Grant Osborne; The Consolidated Quarries Co., represented by Capt. D. McL. McKay.

If you have the remotest possible claim on the hospitality of the Chicago quarry owners just make your next meeting place there. They know how to do it up right and brown, and to the taste of all, no matter what their tastes are. They have that intuition which characterizes the true gentleman, and tells them the desires and pleasures of each one with whom they come in contact. The presence of the true gentleman is felt and you are at home with him; he realizes your pleasures, your comforts, your desires, before you do yourself; you leave him



CHAS. H. ISELE.

with reluctance, you swear by him in the future: even if by a very remote chance, a *thing* who is not a true gentleman comes in contact with him, and by mistake is entertained by the true gentleman, he will fight for him and wonder why he does it.

If any think the Chicago quarry owners are not the real article, let him call on them just once. The man is neither living nor dead who could convince us of anything else than that the Chicago quarry people were, on this occasion, and at all times will be, the true scion of gentility.

Now they knew that eight hours of discussion, deliberation and concentration of mind would welcome some diversion, and an excuse for a cessation of sober consideration and vital problems, and it was provided. At 7 p. m., the many diplomats from all over Uncle Sam's domain were ushered into the banquet hall, and Mr. Chas. Walters, of The Perry-Matthews-Buskirk Stone Co., in a few well chosen words, introduced the favorite of all as toast-master, Mr. Henry Strubel, of Henry Strubel & Co., Chicago. Toastmaster Strubel then told the guests who their entertainers were, and called the attention of all to the fact that such occasions brought each of us in touch with more than his neighbor, as well as bringing neighbor closer to neighbor, and followed by proposing a toast to the quarrymen, which was responded to with a heartiness which showed full concurrence in the sentiments expressed by the toastmaster.

After an eleven-course banquet, with cocktails, wine, champagne, cigarettes and cigars, for all who desired to partake, served in perfect style and without delay, Mr. Toastmaster called upon Mr. Chas. George, of Detroit. Mr. George said: "We have before us a very serious problem in the organization of a national association. The difficulty of framing constitutions and by-laws which shall do justice to all has been recognized for thousands of years. Those with whom we have to deal organized more than twenty years ago, while we were asleep. In consequence of their age and experience they are now thoroughly disciplined, while we are only beginning to realize the benefit of concerted action. The contractor has lost some of his self-respect and manhood and has been afraid to assert himself. He has finally built up an organization of his own, and will no longer feel that he must follow the dictates of others.

Every trade should be organized and every individual represented in that trade should live up to his agreements to the fullest, and all should act as a unit. None should take advantage of the other.

Let this organization be one of the bulwarks of the trade and a monument to every builder here. Let your foundation be firm, honorable and fair to all. The ends desired will be accomplished by a closer association, by a charge shoulder to shoulder of every man in the trade. (Applause.)

Toastmaster: I will next call on the "old war horse" in the stone business, and a bachelor at that, who is well known by most of you, Capt. McKay.

Capt. D. McL. McKay: While I have been actively engaged in the stone business for the last twelve years I did not know that I had kicked and fought so hard as to earn the title of war horse, nor do I know why I was selected to extend the welcome and best wishes of the quarries. I assure you we extend the heartiest welcome possible. The fact of the matter is, we consider it a great honor and pleasure to have you here to-night as one of us.

The quarry owners and the cut stone manufacturers' interests are identical, and unity of action can not help but benefit both. If you do not prosper we can not, and if the wheels run smoothly and constantly with us we can do better by you. I thank you gentlemen. (Applause.)

Toastmaster: I see that there are a number looking at me, and looking hard, but for the life of me, gentlemen, I can not determine whether it is prompted by fear or by an effort to hypnotize me, so I will call on you. Now there is a gentleman whom I know you all wish to hear and he is not one of those who is looking at me either. Mr. Chas. Isele, of Peoria, Ill.

Mr. Chas. Isele: Gentlemen—quarrymen: On behalf of myself and associates gathered round, I desire to extend thanks of the cut stone men for this bounteous spread. After this we could not consistently kick if the price of rough stock advanced $1.00 per foot. The situation with the cut stone man to-day, as is shown by our own deliberations here, reminds me of the advice an old cut stone contractor gave to a friend of his who had two boys. This friend came to the cut stone contractor and said, "John, one of my boys is a bright, clear headed chap, and I have been thinking of making a professional man out of him; the other don't amount to much; he does not seem to catch on to things at all. I guess I will make him a cut stone contractor." John studied a little bit, then replied, "My friend, make your brightest and brainiest boy a contractor, if either is to enter the business, since it requires a lot of energy, brains, judgment and good common sense as well, to make a success of that business." The National Association of Cut Stone Contractors, born here to-day, is a very young but a very vigorous infant, and will develop with great rapidity into a powerful child. It is the desire of this association to reduce the cost of cut stone, through the education of the manufacturers and the use of modern and improved methods of handling and cutting stone, since an advance in the selling price of cut stone seems impossible. This does not seem to appeal to the quarry owner. He need not tremble. It is entirely possible to reduce cost without reducing the price of rough stock.

We want the quarryman to have a living price, and run his own business; we wish to do the same. The gentlemen gathered here can not stand for all the demands made by labor and must insist on conducting their own business, and will stand as one man when they feel that the demands made by labor organizers and walking delegates are not warranted by the facts in the case. With all due regard for the rights of others, and with all due respect for labor, we must insist that we have a voice in the conduct of our own business, and demand that when concessions are asked by labor, they must be well founded before being granted. Labor and capital are both necessary to industrial prosperity. It may seem unwise to express the sentiment shown here in public, but I believe an open statement of the principles which will govern our action, is desirable. We have much to thank David M. Parry, of Indianapolis, Ind., for. He was a prime mover in trade organization, and the first to come right out and speak his convictions in such plain terms that none need doubt his meaning. In consequence, he has sacrificed much. His life even has been threatened. Any thing to fleece the public is unpopular. All capital wants is justice and fairness. We must free the American workman from the walking delegate. Nothing can be more conducive to this end than association, through which we learn that our competitor is not half so bad as we thought. Loyalty and fidelity to obligation will always win. (Great applause.)

Toastmaster: I am informed that there is a gentleman from Cleveland, Ohio, whose duty it is always to speak at banquets, and I know you are all anxious to hear Mr. McCormack.

Mr. C. W. McCormack: I congratulate you, gentlemen, on the progress of your organization, and heartily agree with the sentiment expressed by Mr. Isele. I always encourage association. It is only natural that the buyer wants to buy as cheaply as possible and the seller wants as much as he can get. Cheap John business does no one good. If you stand by the quarries they will stand by you, provided you stand by a fair and uniform price made by the quarryman's association. If you try to cut them they will not stand for you. Such an action would be a powerful disintegrating force, acting on both asociations. Maintain a good price against the common enemy, the builder, who has been trying to work one of us against the other for years, see-sawing competitors to prices below cost of production. Let him pay a fair price, no matter who gets his business. A fair price hurts no one, and is essential to the continued prosperity of business. A fair price does not mean an exorbitant one, no more than it means one at which some one along the line between the raw material and the completed building must lose money, but it does mean such a price that all concerned may have a fair return for time and money expended.

The Toastmaster, after a few remarks on the inequality of different kinds of stone, called attention to Mr. T. G. Deemer, of Chicago, by stating that he was a man of small family, newly married and unknown at home and abroad, and asked him to play a selection on the piano. Since it was a rule of the day that all called upon must respond, Mr. Deemer graciously consented.

While the writer is not a musical critic he knows from the vociferous applause which followed, that Mr. Deemer must have rendered something very much finer than is our good fortune to hear often.

Toastmaster: We have with us friends from an Eastern city which is well known for its smoke production. This city is known as a city of smoke, committees and gentlemen. But this is not all, gentlemen; it has poets and one who has the knack of expressing in verse some of the pertinent labor problems of to-day. I refer to Mr. James B. Clark.

Mr. Clark: I have in my pocket a poem which is not in shape for presentation here; one which was not prepared for this occasion, but since the present spirit of trade is unionism, it may be sufficiently appropriate to answer.

Mr. Clark then produced from his pocket a poem done in lead pencil, an interesting feature of which was a sketch or head piece at the top, the title, as it were, done in imitation of the union label, but worked out to conform to the sentiments of those who have suffered through the unjust application of the principles this label is supposed to stand for. We do not know of a more appropriate heading or title than that sketch, for it fills the bill mighty well, so we have had our artist redraw it and it is reproduced herewith.

The Brand issued by Beelzebub, Supreme Walking Delegate for the Earth, and must be used; *Death awaits* the mortal who disobeys.

"Little Badge of Blackmail"—stamp of the labor trust,
Fade out of sight and let us raise thy votaries from the dust.
"Union Label," horrid nightmare, dragging freeman to their fate,
Scattering with thy bony fingers seeds of black and bitter hate.

Thing of darkest ages, thou lurid imp of Hell,
Is there no god of justice to break the wicked spell?
Take our Christian moral system—there we've often heard it read—
By the sweat of honest labor man shall earn his daily bread.

But the Delegate who's always walking, talking to the rank and file,
Ever shouts for higher wages—and to —— with honest toil.
Strikes direct and sympathetic sweep like storms across the land;
Down to earth shout the fanatics or raise aloft their Union Brand.

Millions cry for liberty, but liberty has fled;
Love, and light, and harmony to other lands have sped.
Ruined homes and blighted hopes follow where you lead
With ignorance, tyranny, arrogance and greed.

Talk of the Millenium, 'tis freedom that we crave,
For labor bears upon its brow the foul brand of the slave.
He who does not bear that impress as he toils along the way
Must run persecution's gauntlet, holding thy hellhounds at bay.

Aye! the blood of many a martyr thou hast shed for brutal show,
Fiend incarnate, evil spirit, and ye gloat to see it flow,
Headless like a swollen river, filled with drift from shore to shore,
And ye rush—but why is reason banished from your council floor?

Barriers to human progress, all ambition thou wouldst't kill,
Jaugernaut of retrogression, rolling backwards down the hill;
Foe to many a human virtue and to old established things,
Raven black! a dismal shadow reigns where'er you spread your wings.

Toastmaster: Pittsburg is not the only city to supply Scotchmen. I think I see "Billy Mason" over there, and I wish Sandy Gibson would say something of his Scotch brogue.

The toastmaster next called for Mr. Hugh R. Edwards, who expressed the thanks of the contractors' committee, which was the guest of the quarry owners as well as the cut stone association. Mr. Edwards spoke briefly, but in very earnest and appropriate words.

Then the Toastmaster suggested that the quartette again entertain a little, which they did.

Toastmaster: The outside world thinks that stone merchants are all stone. The applause shows that we can appreciate many things which would not appeal to a stone wall. I see down the line a stone man who does not find the stone business stirring enough to take all his energy and time. I will call on Mr. J. E. Billingsley, chairman of city council of Indianapolis, Ind.

Mr. Billingsley: I have come to the conclusion that I must either run a job or shut the gate, and over in Omaha I had three strikes on my hands in one week. All I want from labor is fair treatment. I want to do the bidding on a job and will pay the labor, but I also want to, and must be, boss of the job. I must make my living out of stone and not out of politics. Had I known our Omaha friend I should have stayed away from that Omaha job if he said so. I am willing to serve the association wherever I can. (Applause.)

Toastmaster: I know the members of the national contractors' association present would like to do something to pay for their supper and I think Mr. Hart would like to talk.

Mr. J. H. Hart: The strength and growth of this new born baby will be dependent on our loyalty to resolutions. Every failure will be a battle won by the other side. We will do well to profit by the story told on Abraham Lincoln. In crossing a field which had a stone pile and a hay stack in it, he was attacked by a bull and made for the stone pile, and around and around they went. Seeing no safety in this, he made for the hay stack, and circling around that, fear lending a little additional speed, he caught up with Mr. Bull and grabbed him by the tail. After a few more rounds, Mr. Bull got tired of carrying an additional load at such an inconvenient portion of his anatomy and set up a dreadful roar. This did not disturb Abraham Lincoln; he only held on and asked, "What are you roaring about? You started it! (Applause.)

Toastmaster: I have been informed that Mr. James W. Mellville, of Pittsburg, always has a song on tap, and we would like to hear him.

Mr. Mellville: I am always ready to help an evening along. I desire to extend the thanks of the Pittsburg contractors to the Chicago contractors, and especially Mr. Struble for so nobly aiding the Pittsburgers in getting out from under the ycke. Then he sang a Scotch song which was loudly applauded.

Toastmaster: Knowing that New York is bound to rap soon, we must hear Mr. E. F. Giberson, of Brooklyn.

Mr. E. F. Giberson: We expect a full delegation to come down from New York at next gathering.

Toastmaster: There is a saying running in my mind which I used to hear frequently and it was something like this: What did they do to Dugan and what did Dugan do to them? Tell us about it, Mr. Dugan.

Mr. Thos. Dugan: I am a little like the alderman, who packed the primaries with a few thousand votes extra and did not suspect for a minute that he would have to make a speech. He was nominated by acclamation and his enthusiastic admirers were so insistent that he was compelled to do something, so he got up and said he guessed he had to talk though not ready. He said: "Gentlemen, I can lay them all out for honesty, integrity, fidelity and ability, but I can not talk."

The Builders' Association of America did a world of good while operative but it did not go far enough; it laid down too soon. Therefore we must go over the ground again. Organization is a necessity. Clay products, such as brick, tile and terra cotta, and cement products, such as concrete brick and block, and artificial stone, represented by sand-lime brick, are in a measure entering markets which should be ours. We must wake up and get in the band wagon of progress. Things are not as they used to be. Things that are not worth asking for are not worth having. If we will tell architects point blank that we will not figure on a job when we know we could fill the specifications, instead of figuring trying to dodge the issue, we will have taken several big steps in the right direction. This will induce architects to be more considerate and the builder more rational in his demands. I believe firmly in giving quarries a living price and in figuring on a job accordingly. Without organizing, when labor makes a demand we just have to cough up and swallow the dose with a gulp. That is all there is to do. Now the G. S. T. sends all votes to Washington to be counted, and there is only Mr. Mc. Hugh to count them, yet some wonder why he stays so long and why he is there. They wonder also how to get rid of him. Without organization they will wonder a long while and still be in doubt. Gentlemen, the only way to accomplish anything is for this organization to make it unprofitable for him to stay there. (Loud applause.)

Toastmaster: Gentlemen, there is with us a man who has been in close touch with the problems which are of such vital interest to you. While the territory covered by his experience was not so large as yours the solution of the problems were more difficult because the adjacent territory could not be depended upon to act with them. I know you would all like to hear an expression from Mr. E. M. Craig, secretary of the National Contractors' Association.

Mr. E. M. Craig: In 1900 the Chicago cut stone

J. W. WARD.

contractor was in a sad plight and we know better than any other in the United States the benefits of organization. We have accomplished our results mainly by the introduction of the unlimited use of modern machinery. We have thus reduced the cost of the finished products without reducing the cost of the raw material. This was the only way to get a small profit on our business. It was either do that or step down and out. The material man's success is dependent on the contractors' success. If he does not succeed he can not purchase and pay for the material. The time was the walking delegate came in and laid a manifold manuscript before us and said, "Sign this," and like a good little boy, we did so, feeling there was no alternative. The time came when on such occasions we were able to say, "Wait a little, my dear man, we want to look this over and think a little about it before we obligate ourselves." I am happy to say the time has come when we have been able to present a paper and say, "Read carefully, then sign," and it has been duly signed. (Applause.) It has been truly said that trouble brings people closer together. We, of Chicago, are to-day friends, both in word and deed.

(Note—Writer is unable to reproduce the eloquent appeal in advocacy of organization which follows.)

It behooves all to get every cut stone contractor in the entire land interested, and show him that he must get in line with the tendencies of the times, that he must come in and stay in, and stand firm and steadfast on the decisions of the organization. (Applause.)

Toastmaster: On behalf of myself and the cut stone contractors' association, I desire to extend our most heartfelt thanks to the quarry people for the evening's splendid entertainment, and I know we will all go away feeling that the quarryman is a better fellow than ever. We always did think they were pretty nice boys. (Applause.)

Mr. C. W. McCormack: Mr. Toastmaster, I would like a moment's indulgence to offer a suggestion, although I know that advice given unasked for is usually unwelcome. I would like to act as a self-appointed advisory committee, and suggest that your meetings be frequent at all times. We usually do not get together often enough except in times of trouble. Further, money must be put into these things and some one must give his time and attention to it. Many letters must be sent out and many letters must be answered by some one whose business it is to keep in close touch with the situation at every point. (Applause.)

Toastmaster: The advice offered is very acceptable. We desire to work and act in harmony and accord with the quarries.

Mr. Isele: I feel that we do well to act on the advice just offered. We can not help but profit by so doing.

Toastmaster: I thank the quarries for their entertainment and I thank all those present for their indulgence and courteous treatment during the evening.

Mr. Thos. Dugan: Mr. Chairman, before we adjourn, I desire to offer a motion. Gentlemen, I move that a vote of thanks be extended to Secretary Henry Struble, for the effective, careful and conscientious work

HENRY STRUBLE.

preparatory to, and during the formation of this organization, as well as for the considerate manner in which he has presided over this association. The motion was promptly seconded and carried, and then, at the suggestion of the toastmaster, "America" was sung, by way of adjournment.

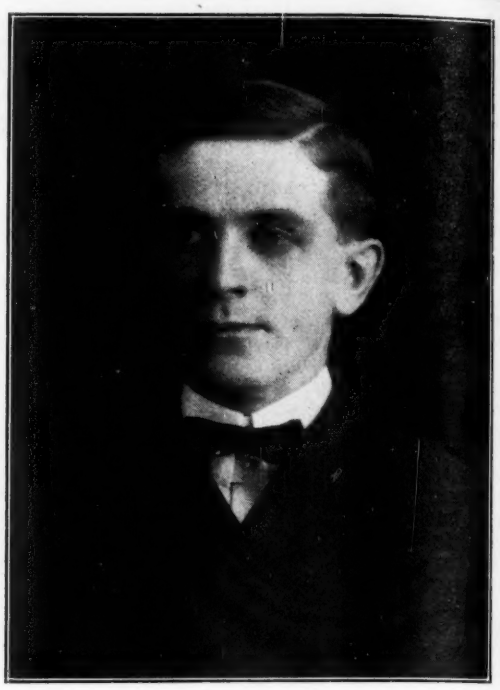
The committee on arrangements, which did things up so nicely on this occasion, was made up of Jas. W. Ward, C. W. Walters and A. E. Dickinson.

There were seventy-eight around the board, and among those present were the following:

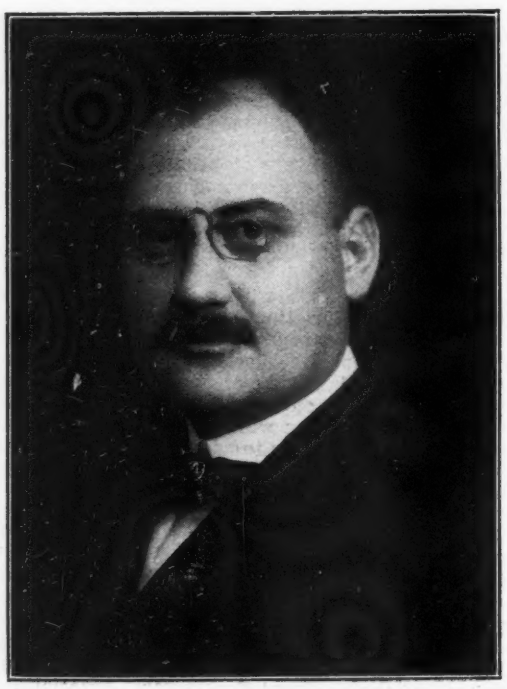
THE ATTENDANCE.

CHICAGO—A. E. Dickinson, W. W. and W. A. C. Smith, Bedford Quarries Co., 204 Dearborn St.; Capt. D. McL. McKay and T. Vernia, Consolidated Stone Co., Monadnock Building; Charles Walters, P-M-B. Stone Co., Monadnock Building; John Rawle, 138 Washington Street; Henry Furst, Furst-Kurber Cut Stone Co., 443 Fifth Avenue; Henry Struble, Henry Struble & Co., 293 40th Street; R. E. Haarsch, Henue & Co., Fleetwood, S. E. corner Blanche; John Tait, 3401 La Salle Street; Chas. Fanning, Jacob Furst's Sons, 73 Hawthorne Avenue; W. N. Thornberg, Ohio Quaries Co., 204 Dearborn Street; James W. Ward, Portage Entry Quarries Co., 138 Washington Street; Hugh Story, Macomber & Whyte Rope Co., 19 and 21 South Canal Street; Henry Ebertsheuser and C. Stein, Stein & Ebertsheuser, 56 E. Division; Joseph Tomlinson, Tomlinson-Riley Co., W. 39th Street and Stewart Avenue; Alex F. Gibson, 3327 La Salle Street; E. M. Craig; T. C. Diener and Wm. Diener, T. C. Diener & Co., 346 and 354 W. 21st Street; C. T. Vandeveer, P-M-B Stone Co., Monadnock Building; C. N. Gustafson, Olson & Gustafson, 3337 La Salle Street; C. N. Godfrainx; J. Kurfess, Kauffman & Kurfess, 523 Elston Avenue; Henry J. DePerre, Ernest Held-Maier, 25th, corner Trook; James Edgworth, Patrick Edgworth, 2709 Stewart Avenue; Charles Dallmann, Dallmann & Stefan, 967 S. Albany Avenue; Paul Larson and John Beyer, P. Kemple & Co., Mather, S. E. corner S. Jefferson Streets.

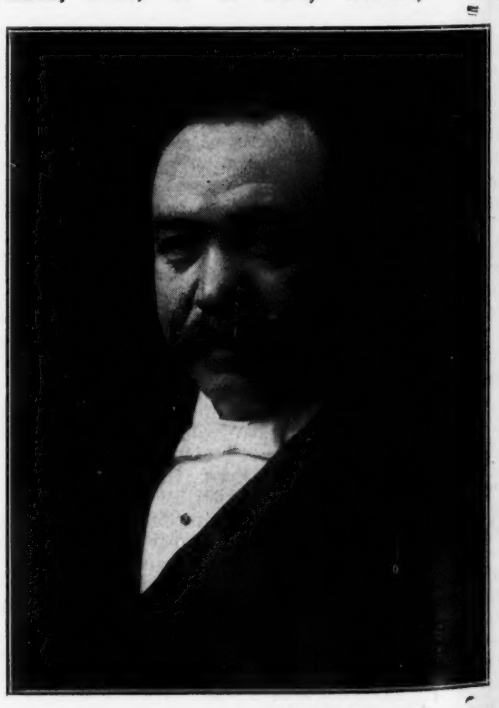
W. W. Whitney, Bedford Quarries Co., Bedford, Ind.; Grant Osborne, Cleveland Stone Co., Cleveland, Ohio; C. W. McCormick, Cleveland, Ohio; Albert Newkom, Toledo, Ohio; C. O. Sutermeister, A. Sutermeister, Kansas City, Mo.; Albert Toll, A. A. Schall & Co., Omaha, Neb.; Charles Isele, Peoria Stone and Marble Works, 1800 N. Adams Street, Peoria, Ill.; Alex King, Alex King & Co., Galesburg, Ill.; G. T. Dugan, Dugan & Co., Bedford, Ind.; M. F. Brooks, Brooks & Curtis, Bedford, Ind.; J. H. Billingsley, J. H. Billingsley Co., 1405 Bates Street, Indianapolis, Ind.; John Ittenbach, G. Ittenbach & Co., 916 Harrison, Street, Indianapolis, Ind.; James B. Clark, Clark Bros., Allegheny, Pa.; James W. Melville, Berg & Melville, Allegheny, Pa.; E. F. Gibson, William Bradley & Son, Brooklyn, N. Y.; Samuel Lederer, Pickel Stone Co., 1320 Old Manchester Road, St. Louis, Mo.; Peter Gray, William Gray & Sons, 30th below Walnut, Philadelphia, Pa.; Fred Andres, Fred Andres & Co., Keefe Avenue and Richards Street, Milwaukee, Wis.; Carl Groth, Adam Groth, Joliet, Ill.; James L. Parsons, Washington, D. C.; J. M. Heartwiz, Peoria, Ill.; T. J. H. Hart, Omaha, Neb.; C. G. Gore, Detroit, Mich.;



C. W. WALTERS.



G. C. OSBORNE.



S. M. LEDERER.

H. C. Wood, North Adams, Mass.; H. R. Edwards, Racine, Wis.; H. L. Strassell, Louisville, Ky.; Milton Council, Topeka, Kan.; L. Wilson, Pittsburg, Pa.; S. V. Peppel, ROCK PRODUCTS, Louisville, Ky.; T. J. Johnson, American Hoist Machine Co., St. Paul, Minn.; John Bonnett, General Construction Co., Galena, and 31st Street, Milwaukee, Wis.; J. Haynard, Peter Schmidt & Co., 355 E. North Street, Milwaukee, Wis.; John Merkle, Central City Cut Stone Co., Peoria, Ill.; Mr. Edgare, Columbus, Ohio; M. Kieghley, Pittsburg, Pa.

If Henry Struble had heard all the nice things said about him by the cut stone men in attendance at the convention, the hat worn by the biggest man present would not have been half large enough to carry the gray matter with which Henry has been so well endowed. We do not mean by this that Mr. Struble is unusually susceptible to flattery, but the expression of these good people was so honest and well meant that we know even St. Peter would have swelled up and looked two inches taller, had the same been said about him. His heart is in it, his soul is in it, he knows if his neighbor profits and prospers he will do likewise.

Three cheers for Hy!

There were many and varied interpretations of the C. S. C. on the buttons worn by the cut stone contractors at the Chicago meeting, both by the initiated and the uninitiated.

OPEN HOUSE.

During the meeting of the cut stone contractors in Chicago, The Bedford Quarries Co. and the Ohio Quarries Co. held open house in the parlors of the Grand Pacific Hotel. The Ohio Quarries Co. held forth in Susie's room and the Bedford Quarries in the Indian's room. These were adjoining rooms and it is hard to tell which was the more popular, since sometimes one was full and in a few minutes you could find them all in the other room drinking seltzer water (?) and smoking good cigars.

These two quarry owners certainly did everything possible to make those who cared to call to feel at home and enjoy themselves from start to finish. On the night of January 19 such of the cut stone contractors from out of town as had made their appearance along with a number of Chicago contractors and quarry owners, were entertained, along with other things, with an old fashioned literary society meeting like our fathers tell about, you know. The performers were all *local stars*, just as the performers of old were on such occasions. Space will not permit the mention of more than a few of them.

A. E. DICKINSON.

On recitations, Mr. "Sandy" Gibson seems to have won the blue ribbon and still stands a universal favorite. But when it came to songs, none of them were in it for a minute with Mr. John Tait. When it came to impromptu speeches, Mr. Stein led the bunch and had the floor whenever the spirit moved him to expression. When it came to athletic feats, the Scotch claim a victory over the German element on endurance tests. All were having such an agreeable time that it was a late hour before any one thought of suggesting an adjournment.

On the two following days the cut stone contractor circulated freely in and out of those two rooms whenever he could get away from the arduous duties of the meeting. The cut stone contractor will no doubt appreciate the additional courtesy shown by these quarries.

It is probable that the other quarries would have held open house, as did the Bedford and Ohio Quarries Co.s, had they not believed that the entire entertainment of the cut stone men was to be a joint affair.

The president of the National Cut Stone Contractors' Association, Mr. Charles H. Isele, was born in Germany fifty-two years ago, and has been an active man in the stone business since he was twenty-one years old, rising from the ranks of a common workman to the head of an institution. His capital to start on was energy, industry, progressiveness, faithfulness and loyalty to every duty. His early school education was rather limited, but his practical education in the way of experience has been very thorough and this has more than made up for the other. He has always been recognized as a staunch advocate of broadminded principles. Twenty-four years ago he organized and founded the Peoria Stone and Marble Works, Peoria, Ill., where he is still doing business, enjoying the confidence and friendship of his competitors as well as his customers.

The Crystal in Good Shape.

The Crystal Marble Co., Spokane, Wash.—Referring to an item in your issue for January, I wish to state that the Receivership of the Crystal Marble Co. was only temporary, pending a hearing, and the court promptly dismissed the proceedings at that hearing. The company's business is now well established, the output for last season reaching 500 tons, and its Spokane mill being now operated continuously, with plenty of orders, and its material and work giving excellent satisfaction. By the way, this company furnished all the material in connection with the marble stairway in the State building at St. Louis, and a good exhibit of Washington marble may be counted on for that exposition.

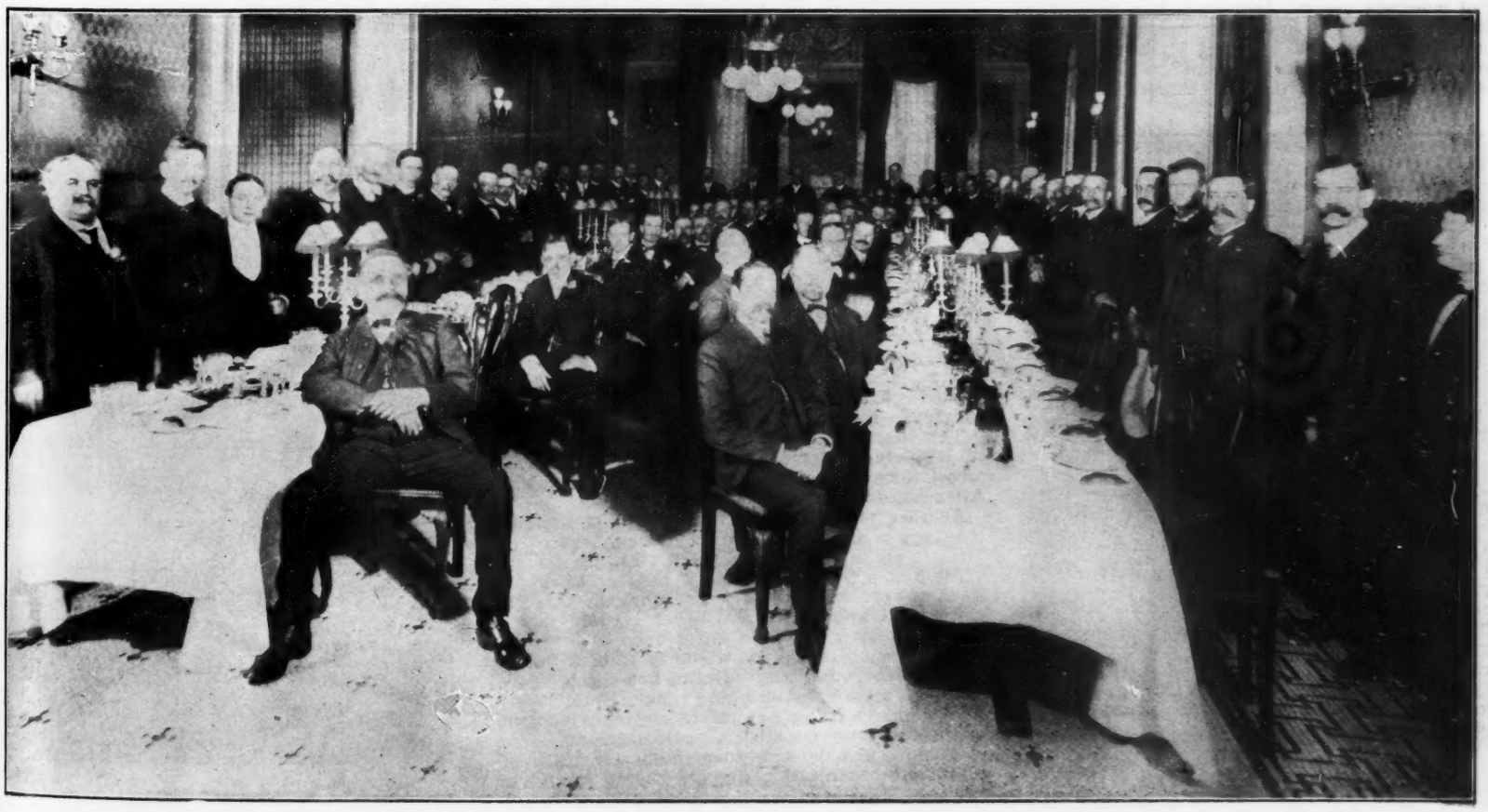
Cement Blocks in the Northland.

John J. Smith, Yorkton, N. W., Canada.—Last year there was started in the town the first building West of Port Arthur in Cadada, built of cement blocks. The blocks are giving good satisfaction. They will stand the cold all right. I make these blocks, and last summer built a store of them myself, and have orders for a lot of buildings for this summer. Some people are even going so far as to say the building question of this country is solved.

Expect a Good Season.

St. Louis Granitoid Curb-Stone Co,, St. Louis, Mo.—The past year with us was not quite as prosperous as we had hoped it might be, but it is always very hard to get a new thing introduced. Still we are pleased to report that the outlok is much brighter for the coming season. We have enough work contracted already to keep us busy for some months. We rented closed quarters for the winter months which we can keep warm, so that we have not been compelled to stop work on account of the weather. We are busy at work making our curbing and sewer caps, so as to have them ready to put down when spring opens. The sewer cap we are making is one patented by our secretary-treasurer, J. E. Bedell.

Charles Parker, who has been manufacturer of clay brick at Franklin, Va., for ten years, has become interested in the artificial stone problems and is thinking of organizing a company to make sand-lime or cement brick.



A Flashlight taken at the Banquet given by Chicago Quarrymen to the Cut Stone Contractors.

Meeting of the National Quarry Owners' Association at Chicago, Illinois.

The Second Meeting of the National Quarry Owners' Association was Held at the Grand Pacific Hotel, Chicago, January 21, and Good Work Done.

OPENING SESSION.

The second meeting of the National Quarry Owners' Association was called to order at 2:00 o'clock, January 21, by President D. McL. McKay, of Chicago. Among those who were present at the session were H. D. Martin, Dolese & Shepherd Co., Chicago; Wm. Hammerschmidt and Chas. Hammerschmidt, of the Elmhurst Chicago Stone Co., Elmhurst, Ill.; A. C. O'Laughlin, of Jas. & A. C. O'Laughlin, Chicago; Jas. O'Laughlin, of the Jas. O'Laughlin Stone Co., Racine, Wis.; Sol M. Wolf and T. E. Wyant, of the Bellevue Stone Co., Bellevue, Ohio; A. E. Dickinson, of the Bedford Quarries Co., Chicago; A. P. Davis, of Davis Bros. Stone Co., Lannon, Wis.; B. F. Fromme and J. A. Jackson, of the Jacobs-Portage Redstone Co., Houghton, Mich.; J. A. Blair, of the Lake Shore Stone Co., Milwaukee, Wis.; D. McL. McKay and T. J. Vernia, of the Consolidated Stone Co., Chicago; W. R. Mahan, Monroe County Oolitic Stone Co., and O. M. Fulwider, of the United States Oolitic Quarries Co., Bloomington, Id.; Samuel Lederer, of the Pickel Stone Co., St. Louis; Jas. Ward, of the Portage Entry Stone Co., Chicago; D. M. Hineman, Marion Ohio; Nicholas Lauer, Ottoville, Ohio; Henry Furst, Chicago; C. W. McCormick, Cleveland Stone Co., Cleveland, Ohio.

President McKay said, "Gentlemen, the effort to form this association has been made largely by the secretary. When elected to this office I informed the directors of my inability to give much time, but I was in thorough accord with the advantages of the association, believing that the opportunity for great good to be accomplished would be demonstrated when the membership would be increased to such proportions as would make a good, lively meeting, and discuss such matters of interest to the quarry people as would make them better quarrymen by exchange of ideas on methods, would find more intelligent competitors in the business, and would be benefited by the effort."

The secretary then spoke of the difficulties in securing an increase of membership, and lack of interest shown by quarrymen, who really were interested, but let the other matters detain them from making the start to become one of them. The opportunity was never so bright for improving conditions of the stone business, both in encouraging concerted effort to combat competition and to improve on present methods of operation. Of course, there should not be any particular discouragement in the fact that we haven't a hundred members present, because it is a part of the history of every organization composed of individual members, that the first hundred members are the hardest to interest, and while we have maed progress since the last gathering, we need to do a lot of hard work during the next twelve months and make a strong effort to put this association on the footing where it belongs, because of the importance of the industry it represents. Every quarryman can get profit and satisfaction by joining our ranks, and our next gathering should be one of five times the size. We had two preliminary meetings before the National Lime Manufacturers' Association began to grow and it now shows some eighty members or one-third of the number of lime men operating, and perhaps sixty per cent. of the production of the United States. The same methods applied to this association would insure its success, but one of the strong points of the National Lime Manufacturers' Association has been the faithfulness of its members and their desire to gain knowledge pertaining to business lines, and its influence is strong from Maine to California among the up-to-date lime men. By the efforts of its members, we hope to see the National Quarry Owners' Association bud out in the same manner, which it will do, if aided by the co-operation of the individual concerns.

MR. WM. HAMMERSCHMIDT.

Mr. Hammerschmidt said that since there was so very little expense connected with the association, with the exception of postage, stationery, etc., he woud move that the by-laws be amended making the membership fee $5.00 and the annual dues $5.00 in order to encourage as many quarrymen to join the association, as possible. This was seconded and approved by those present.

Mr. Wolf said that he thought this association should be made up of individual members rather than a delegate body, because if we make it a delegate body we lose many advantages by inability to discuss methods and give information freely to their brother members in the association. This line of thought was favored by Mr. Davis, of Lannon, Wis., and Mr. Hammerschmidt in speaking of this subject said: "My experience with associatios is based on an association in Illinois, of which I am the treasurer. We started with five members. had twenty at the second meeting and have had from seventy-five to a hundred at every meeting since then, it being a local organization, and I agree, with that gentleman regarding the delegate system, because I believe that each quarryman, no matter what his location or what he produces, should be a member of the association."

This brought forth a motion from Mr. Fulwider, of Bloomington, Ind., that delegates from small associations should be taken as single members. After considerable discussion, this was lost.

Another member suggested that at the annual meetings of the association, machinery men be invited to make exhibits and given a certain amount of time of a two or three days' meeting to discussions of such subjects as were before the trade in mechanical appliances, and other matters that a machinery man would be called upon to bring before the members, and we would be gaining knowledge thereby, and the "Button-hole Club," composed of machinery men and others could be depended on to bring a hundred or more men on matters of interest to both, and at the same time it would make the machinery men more interested in our organization and its success would be assured.

Another member said: "Our trouble is the new man in the business. If we can get this association on an individual membership basis and get not only the old quarrymen, but the new ones into the association, it would be the means of making better competitors of the men who think they must cut their prices to any old thing in order to sell their product, but by joining this association, there can be obtained a better competition in the business, and the association will have accomplished this much."

Mr. Mahan suggested that each member should send a representative to each of the meetings. This of course was considered a fact, and, therefore, the chairman said that each concern should send a representative, either local or from the quarry, to the meetings and this would be a very good thing for both the selling and operating ends and they would also gain better benefit through the organization. Mr. Wyant, being at operating end, said that he would like to see the men operating the quarries present at the meetings of the association, believing that the benefits accruing therefrom would be a help to all concerned, and knowing from his own standpoint that he had gained information since he became a member, and was willing to repeat anything that would be of use to his neighbors. Thus the good work was moving on, although we might make more progress than we have done in the last six months of the life of the association.

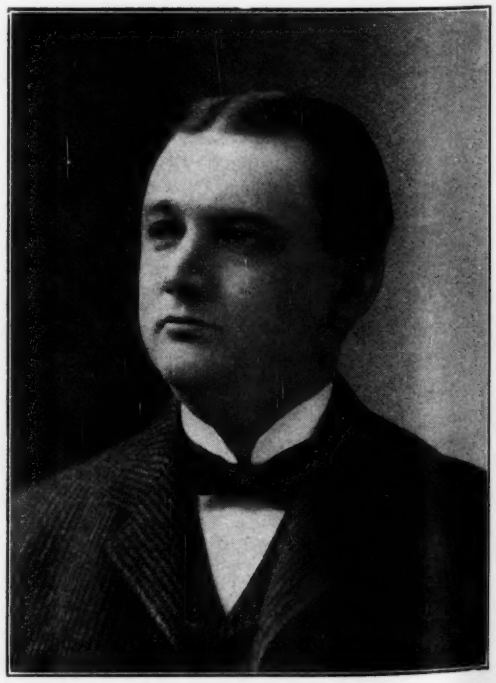
The president said that there was a motion in order for a membership committee to be appointed. This brought out considerable discussion, as was intended, because it was necessary for every man present to make an individual effort to push the association that it might accomplish greater good, and local organizations should be formed wherever two or three quarries were operated.

Mr. Fulwider suggested that Bloomington needed an organization.

Another member said that he was glad to see a gentleman present who was a competitor, and they had seen the smoke coming from each other's chimneys for many years, but unfortunately had never met, but was sure that after this meeting they would meet often. Some wag said: "I can see the price of stone go up before the sun goes down."

Mr. Wolf said in line with the thought of local organization: "We will make an effort to get others in our section together to try to get their cooperation in the association, believing that the source for discussion of information comes from Maine to California, and you can count on our cooperation along this line."

CAPT. D. MCL. MCKAY.



W. N. THORNBERG.

A Michigan member said: "It would do us good to get together occasionally, and it is this influence that we need. I will try to see what I can do to increase the membership of our section."

A Wisconsin member said: "We work together in every way, and have found it beneficial. We will make an effort to help increase the membership of the National Quarry Owners' Association, and see what we can do to increase the interest among our local men."

Mr. Wyant asked the question: "Hasn't there been business enough if the prices were right?" Each member present said that this was true, and that all that was needed was for all to work in harmony with the National Quarry Owners' Association, to aid conditions materially. Another question I would like to ask: If you cut prices in the spring, aren't you generally sorry in the fall? This subject brought out a good deal of mirth, and each in turn concluded that he had been in that position.

Mr. McKay, in speaking of the advantages of an exchange of ideas said: "In our section there are not fifty thousand cubic feet of mill blocks on hand in all the quarries, yet the production of the year has been good notwithstanding a two months' strike. Still business has been good and I see good money in the low stocks, and if the quarrymen who were doing much business will co-operate and decline to pick up small orders and help their small competitors in the trade to meet obligations, they will help the market materially. I am glad to see that the stone people are catering to the building trade are getting educated and not backward about asking a little more for stone rather than depending on a cost basis, which they are not sure about, but think perhaps they will cover their cost of getting the stone out. We have handled big contracts for big customers for many years, who know that we can get the stone, and we do not have much trouble getting their orders. Our sales run up into big figures, and I know that there is no man in the business who can't be benefited by an exchange of ideas and friendly co-operation."

Mr. Wolf then spoke of the price he was securing for crushed stone for macadam.

Another quarryman said that eighty cents per yard was necessary to him to get a profit.

Another said: "If we do not get seventy-five cents in Illinois, we do not make any profit."

The meeting then adjourned until ten o'clock on Friday.

FRIDAY'S SESSION.

The meeting was called to order by the chairman and the question of inviting machinery men to co-operate with us was brought up again, and the secretary was authorized to send them application blanks and solicit their friendly co-operation.

The next thing in order being the election of officers for the ensuing year, Mr. McKay, who was nominated for President, suggested that owing to the necessity of his business, his time was very limited and he must apologize for the apparent lack of assistance given to the secretary in the work during the past year, but believed in unity of the business, and quarrymen in any class of stone would find benefit by co-operation with the association.

Mr. Hammerschmidt and Mr. Wolf cast the vote of the association for the old officers for the ensuing year, and it was carried with a whoop, the only change being the addition of Robert Reed, of Bedford, Ind., and A. C. O'Laughlin, of Chicago, Ill., to the board of directors.

On motion of Mr. Hammerschmidt, the secretary, was authorized to cast the ballot of the association for the following directors:

Sol M. Wolf, Bellevue, Ohio; A. J. Blair, Milwaukee, Wis.; Donald Smith, Barre, Vt.; Robert Reed, Bedford, Ind.; A. C. O'Laughlin, Chicago, Ill.

In discussing the advisability of the next meeting place, the gentlemen present were of the opinion that the best place would be Chicago, and that was selected as the next place of meeting.

Among the subjects discussed on the floor of the convention, and considerable information gained thereby were the following:

QUARRY STRIPPING.

Hydraulic Stripping—Where and under what conditions can it be employed to advantage?

The Steam Shovel—When and under what conditions can it be employed to advantage?

WATER IN THE QUARRY.

By what means and to what extent can a man protect his quarry from water, and what part of the expense of operating a quarry does pumping out the water constitute?

QUARRY PROSPECTING.

To what extent can a man depend on a core drill for determining an unopened ledge of rock?

What other means can be suggested for investigating the merits of a ledge of rock with a view to determining as near as possible its value before opening up the quarry?

THE LEDGE.

What is a fair representative basis of value of an undeveloped ledge of—

Limestone,
Granite,
Sandstone,
Marble.

DRILLING AND CHANNELING.

What do you know of the relative merits of compressed air and steam for drilling, channeling and operating in a quarry? What of the future of the plug drill in the quarry?

THE DERRICK.

Is there a chance to improve on the derrick as it exists to-day for handling stone in the quarry? Or, can some other appliance be substituted to advantage?

A PLEA FOR IMPROVEMENT.

Among members in attendance at such meetings there should be a number of ideas in regard to improvements of quarry methods which might be brought out and discussed for the general good of all. Improvement is the order of the day, and if you have an idea that you think will improve your own methods or the other fellow's, tell us about it.

BLASTING.

What is the best method to use in blasting for lime kilns and crushers.

THE WASTE PILE.

To what extent is the crushed stone industry solving the problem of waste stone in the quarry? What other opportunities are there for disposing of waste to advantage?

LOCAL SALES.

How to take care of 'em.

The treasurer's report was then read and approved.

Communications were then read from the Cut Stone Association, Masons and Contractors Associations, and also the Barre Granite Manufacturers' Association with reference to joining the association. The discussion at the first day's session settled that matter but the members present wished to ask the co-operation of the associations named and asked them to send a delegate to our next meeting and endeavor to work out a definite line of co-operation which would be beneficial to all concerned.

The meeting then adjourned, those present expressing the pleasure of the occasion, only regretting that the attendance was not two hundred strong.

NOTES OF THE QUARRY MEETING.

The crowd was enthusiastic over their president.

Nick Lauer, of Ottoville, Ohio, was buying a new crusher.

Mr. A. P. Davis, of Lannon, Wis., is an earnest association man.

Mr. O. M. Fulwider, of Bloomington, Ind., had his satchel with him, and you bet the cut stone men knew the color of his Bloomington stone.

Mr. Wolf and Mr. Wyant, of Bellevue, Ohio, suspended business for a time in order to spend as much time as necessary to make the association a winner.

Mr. W. E. Austin, in charge of the Southern sales department of the Austin Manufacturing Co., with headquarters in the Century Building, Atlanta, Ga., mingled with the crowd and each man dubbed him "Colonel," but he denied the appellation.

President Jackson, of the Jacobs-Portage Redstone Co., Houghton, Mich., was on his way South. Not being an old stone man, he didn't spend much time with us but said he believed in what we were doing and was glad he had dropped in.

Mr. Hugh Storey, the popular vice president of the Macomber & Whyte Rope Co., 19 and 21 South Canal, Chicago, Ill., helped to make the social features of the association a success. He was furnishing playing cards to those present.

Secretary McCormick of the Cleveland Stone Co., Cleveland, Ohio, was as clear cut a business man as there was in the party. He is a great believer in organization and contends that there is a great necessity for it among the building stone people.

If there was anybody around the cut stone or quarry meeting who did not see Henry Furst, of Chicago, or see that he was desirous of making everybody have a good time, it was because he did not have his eyes or ears open.

Mr. J. A. Blair, of the Lake Shore Stone Co., Milwaukee, Wis., could not spend the whole time with us on account of his annual meeting coming on the second day's session of the convention, but assured those present of his desire to do anything possible to make the association a success.

The elder Mr. Hammerschmidt, of Elmhurst, Ill., is a giant in a bodily sense as well as in "gray matter." Speaking of the association, he said he always has time to go, although he is a busy man and runs a cemetery and several quarries, but has plenty of time to encourage that friendly co-operation with competitors which always insures better profits, and that is what he is after in business.

Among the visitors at the National Quarry Owners' Association was Herbert S. Long, who manufactures Long's perfection dump cart and dumping wagon, a very unique wagon which no doubt will be successful when once before the people.

QUARRY NEWS NOTES

The quarry firm of Hill & Co., Rockland, Cal., has been succeeded by J. P. Wallen & Co.

The West Virginia Stone Co. has been incorporated at Moundsville, Va., with a capital stock of $50,000.00 to quarry stone.

The Armfield & Cartwright Co., operating a quarry and crusher at Portland, Ind., are preparing to erect a crushing plant at Ridgeway, Ind.

F. W. Cook, of Minneapolis, Minn., has bought $30,000.00 worth of property in the limits of that city, where will be developed stone quarries.

The Valley Stone Co. was recently incorporated at Schenectady, N. Y., with a capital stock of $50,000.00, and is opening a quarry near there and will erect a crushing plant.

Robert W. Bradley, Cheyenne, Wyoming, who is a contractor and also operates stone quarries, is said to have discovered a large deposit of marble which he will probably develop.

The Paddock & Myers Co. has been incorporated at Racine, Wis., with a capital stock of $10,000.00, to operate quarries. The incorporators are: W. H. Webb, B. C. Cook, A. W. Young, J. R. Hile and Frank A. Ross.

The Chase County Stone Co., Cottonwood Falls, Kan., recently installed a new engine and are reported to be operating day and night, with enlarged capacity. They will also equip their quarries with steam drills.

The Newsom Crushed Stone and Quarry Co. has been incorporated at Nashville, Tenn., with a capital stock of $20,000.00. The incorporators are: F. J. Fuller, J. A. Cooper, C. Cooper, W. T. Bridwell and E. B. Wilson.

The Big Sioux Granite Co. has been incorporated at Sioux Falls, S. D., to develop black granite quarries in that vicinity. The incorporators are: P. F. Sherman, president; C. E. McKinney, treasurer, and F. H. Hollister, secretary.

There has been some change in the personnel of the T. J. Sweeney Quarry Co., of Bowling Green, Ky. Mr. T. J. Holman has bought out the interest of John and A. Wilkins in the company, and the proprietors now are Mr. Holman and W. F. Innes.

John C. Rodgers, proprietor of the Cobleskill quarries has secured a large contract for stone to be used in the extension of the riverside drive along the Hudson in New York City. The contract calls for over $1,500,000.00 worth of stone, so it is expected that there will be busy times around the quarries this spring.

The Bellevue (Ill.) Stone Co. held a stockholders meeting recently at which a satisfactory year's business was reported. The year showed, in fact, to be the best in the history of the company and the largest in point of volume. Also there are enough orders on the books now to insure another busy year. Officers were elected for the ensuing year as follows: W. M. Halliday, Mrs. T. E. Wyant, C. R. Callaghan, T. E. Wyant and Sol M. Wolf.

The American Marble and Onyx Co., which has headquarters in New York City and quarries at Salida, Colo., has commenced shipping marble. A quarry is being developed under the supervision of sculptor Shaw, who seems very enthusiastic over the qualities and varieties of marble found. They have a yellow marble which has been the rage among architects lately, and about twenty-six other varieties, representing almost all colors and tints, from pure white up.

Fifth Annual Meeting of the National Builders' Supply Association.

The Iroquois Hotel, Buffalo, N. Y., Was Headquarters, and There Was a Great Gathering of Dealers and Manufacturers of Builders' Supplies.

Standing at the gateway of the West, to the seaports of the East, as if a sentinel guarding the commercial highway leading from the golden slopes of the Pacific, the gardens of the Mississippi and the great Northwest, Buffalo has a naturally favorable location which has induced a healthy growth, until it is the eighth largest city in the United States, and fourth in commercial importance in the world. This queen city of the lakes has, in recent years, also been brought very prominently before the world by being the site of a great international Fair. And, now we want to call special attention to Buffalo again; not only because of the many fine qualities it has as a city, but especially because of the fact that there has just been held within its hospitable confines, one of the greatest meetings of dealers in builders' supplies, together with manufacturers of these products, ever held at any place or at any time.

Before the gathering met, the local committee, which consists of Hon. J. H. Ross, M. A. Reeb, W. S. Humbert and Charles C. Calkins, had been busy for some time getting things in shape to entertain the visitors royally. Buffalo is one of the few cities North of the Mason and Dixon line where one can see the sights to advantage in winter time. One of the peculiar features that gives it these characteristics is furnished by Niagara Falls, where the view in wintry weather, is even greater than in summer. When the great falls gets its winter clothes on it presents a scene that is never forgotten, especially in the great ice bridge that spans the canyon below the falls; so it goes without saying, that a trip to Niagara Falls was among the features planned for the entertainment of the visitors. This was only one feature, however, and there was plenty of others planned for the entertainment of the visitors, which will be told of before the report of this meeting is completed. The local committee measured with a free hand and gave full measure in its plans to make the delegates welcome, planning at the same time for a big crowd. And the crowd came, too, the number being about 150 the first day, making the largest attendance represented at any meeting of this kind.

The headquarters were at the Iriquois Hotel, and the meetings began Tuesday, February 2. There was an executive session in the morning at which the president and other officers made their annual reports, new members were elected and other routine business transacted.

THE JOINT SESSION.

It was 2 p. m. (Eastern time) when President J. A. Kling called the general meeting to order, and introduced Hon. J. H. Ross, chairman of the local committee, who in turn introduced Hon. Herbert P. Bissell, one of Buffalo's most interesting and eloquent speakers. Mr. Bissell added to Buffalo's fame in his speech of welcome to the delegates which is given herewith:

ADDRESS OF WELCOME.

(BY HERBERT P. BISSELL.)

Mr. President and Gentlemen: The pleasant duty has been assigned to me by your local committee, of extending to the members of the National Builders' Supply Association, a hearty welcome to the city of Buffalo.

I assure you that our citizens appreciate the honor which you have conferred upon Buffalo by selecting this city as the place for holding your national convention, and we trust that your stay with us will be both profitable and enjoyable.

I confess, however, Mr. President, that the weather conditions now prevailing do not fully accord with our sentiments of hospitality, and I only hope that you will on some future occasion again honor Buffalo by a visit during the summer season, when we can welcome you most cordially, not only with sincere and heartfelt greetings as we do to-day, but also with the gentle zephyrs which, springing from the bosom of Lake Erie, sweep delightful refreshment over what you will find to be the most charming summer city on the American Continent. But just now I feel that it must have been a Buffalo poet who wrote the lines:

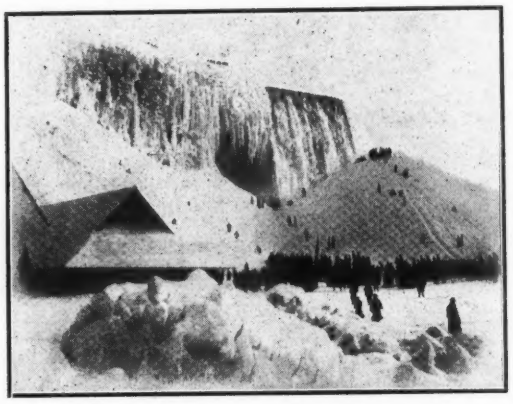
"A sorry world is sighing now,
La Grippe is at the door,
And many folks are dying now,
Who never died before."

Yet I realize, gentlemen, that you have come together at this time of the year, when the cold chilling blasts from Lake Erie's fields of ice fill the Buffalo mind with longing dreams of Palm Beach or Santa Barbara, not alone for purposes of enjoyment and good fellowship; but, primarily for the serious work of an important and extensive business organization; for I am informed that this is a joint gathering of the representatives of the manufacturers and dealers in building materials throughout the United States.

It would be manifestly superfluous for me to argue to you that association and co-operation are of inestimable advantage to a great industry like yours. The value of association is now so generally recognized, that we see on every side organizations that assemble regularly in convention to interchange views and secure co-operation, in all of the branches of science, art, industry and beneficence.

It has been truly said that "Isolation is barbarism—association is civilization."

The early savage protected his life and property



NIAGARA FALLS IN WINTER ATTIRE.

only by his individual vigilance, and the strength of his own right arm, and it was only as the dawn of civilization gradually broke upon his darkened mind that the advantages of association were revealed to him. With association came law and order; with law and order came right and justice; and with right and justice came peace and prosperity.

Now, I suppose that even the great and good building industry which you represent has passed through its period of barbarism, when every man—whether manufacturer or dealer—has been a law unto himself, pushing his own business by any method that could not be brought within the prohibition of the criminal law, exalting his own product by roundly abusing and misrepresenting the product of a competitor, regarding it as an evidence of enterprise to trespass upon a neighbor's territory, and viewing as a legitimate path to success the misleading and unfair advertising that can not fail to demoralize any legitimate trade.

I assure you, however, that I do not charge that any of you gentlemen were ever guilty of the acts of barbarism I have referred to; but I do say that if any of the mistakes that I have enumerated ever were committed by members of this association, you have merely followed the example set by some other trades and industries with which we are all familiar, and undoubtedly before the organization of the National Builders' Supply Association.

The wisdom of the manufacturer and the dealer meeting in joint convention is most apparent because their interests are as inseparable as were the interests of Chang and Eng, the celebrated Siamese twins. The manufacturer must regard the legitimate dealer as the only proper channel through which his manufactured goods should be distributed, while the dealer must do everything in his power to co-operate fairly with the manufacturer. They are as closely united in interest as the most devoted man and wife, and like them are bound to suffer disaster whenever there is just cause for a divorce.

They should labor together for the improvement of methods, the correction of injustice, the suppression of abuses and the righting of wrongs. Otherwise, there can be no common sense reason for the existence of this association.

Whenever a dealer or a manufacturer refuses to join your association, you may well look upon him with suspicion, for those who are opposed to a closer affiliation for these mutual benefits will surely be found amongst the disciples of greed, avarice, trickery and egotism—and I might add alcoholism, did I not know that no such class exists in the building trade. You will find that they are never willing to subscribe to and support the humanitarian maxim, "live and let live," but are consumed by that sordid spirit of commercialism which can never be advantageous or profitable in the long run to any trade or industry.

And referring now to commercialism, I think it will not be out of place or untimely for me to briefly call the attention of the members of this splendid association to the duty which I believe all business men owe to their country, to aid in rooting out the spirit of commercialism which seems nowadays to be spreading the taint of corruption throughout our national life.

In the early days of the American Republic our fathers were imbued with a desire to devote themselves in a simple and straightforward way to the interests of all of their fellow citizens. To be chosen to a position of trust in the nation, state or city was regarded as an honorable distinction, calling for the exercise of earnest and honest efforts for the common welfare, without regard to the pecuniary compensation, and without regard to the sacrifices that the incumbent must make. To-day the spirit of commercialism seems to be permeating every branch of our civic life—national, state and municipal. It is seldom that we see our best men accepting public office with the ambition to serve only the public welfare and to receive their full reward in the honors which follow faithful public service. Men ask now, not how much good they can do, not how honorable the distinction is, but what there is in it. Is is not, therefore, high time that our business men should interest themselves in public questions, and resolve to bear their full share of the burdens of political activity, with the determination to instill into political affairs the principles of business integrity? And this duty is all the more incumbent upon Americans, because in a government like ours, every citizen is a member of the governing class, and any citizen who becomes indifferent to the duties of citizenship shirks an important responsibility.

Never did the opportunity present itself more clearly than now for good citizens to do effective and patriotic service for their country's good. The issues before us are not issues of sentiment or of passion, they are simply issues of good government, of municipal and administrative reform—issues especially calling for the devotion of business men who believe that the same rules of moral rectitude should prevail in political as in private or business affairs.

But I must not forget that I was not invited here to moralize or give advice, but to deliver an address of welcome, and so with renewed assurances of the genuine satisfaction felt by the citizens of Buffalo in your presence here at this time, I will conclude by expressing the earnest hope that your convention will be so successful and your recollections of Buffalo so agreeable that we may have the pleasure of again greeting the members of the National Builders' Supply Association, and "in the good old summer time."

Mr. Bissell was given a hearty round of applause at the close of his talk, after which President Kling addressed the meeting as follows:

PRESIDENT KLING'S ADDRESS.

It gives me, as president of the National Builders' Supply Association, great pleasure to have the opportunity of addressing so large a number of manufacturers of builders' supplies at this, the annual meeting of our association, which to me pres-

HON. J. H. ROSS.

ages the beginning of an era of better feeling and understanding between the manufacturers and the dealer.

Only the greatest benefit to both can result from such friendly relationship, since we can be of assistance one to the other in more ways than one. Many manufacturers have not been willing to concede in the past that the dealer is a necessity, but we believe that more has been done in the past few years to bring about this feeling than has been the case heretofore.

We contend that a large percentage of the success which manufacturers obtain in any territory can be traced directly to the efforts of the dealer in their behalf. It is a known fact that a dealer can do considerable to resist the manufacturers' gains in any territory, if he so desire.

Friendship on the part of the manufacturer toward the dealer can only exist when both are considerate of each other's best interests. Dealers can not expect anything from the manufacturers, unless they in turn can give value received; neither can the manufacturer expect dealers to be loyal and battle for their interests unless the remuneration is lucrative and protection is assured.

While large contracts may be a great temptation to the manufacturer to quote direct, they must consider local trade which exists at all times and on the whole, is more desirable.

We believe that if all dealers and manufacturers could be brought to see matters in the light of mutual assistance, it would not be long before the question of place for both would be definitely settled to the entire satisfaction of all.

I hope the day is not far distant when all strife between manufacturers and dealers will be a thing of the past and in order that such a condition may be brought about the more readily both should cooperate in assisting to remove such things as most frequently cause disputes.

I believe that manufacturers would find it advantageous to cultivate a friendly feeling among themselves, thus materially reducing competition which results in cutting prices, as competition of this nature does not increase consumption, but reduces profits and is a very serious defect in the present method of doing business.

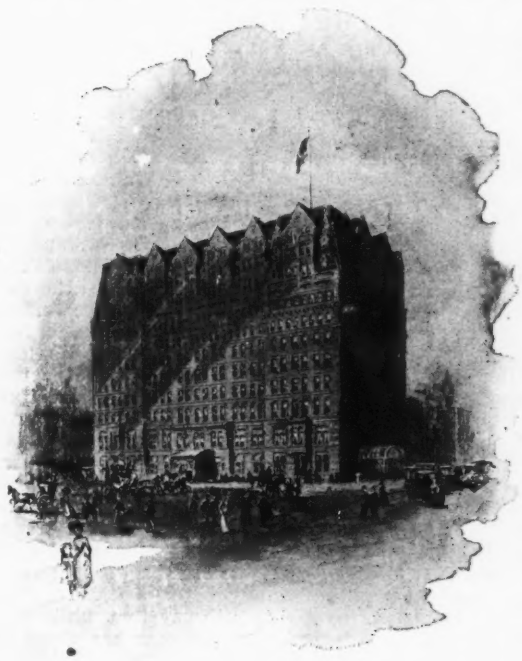
The greater part of this can be done away with by an intimate acquaintance of one with the other. This acquaintance leads to friendship and confidence, and the confidence in turn leads to mutual understandings which can be made beneficial to all.

Inasmuch as a number of very able men will address you upon subjects which I know will be of interest and appreciated by all, I will let these few remarks suffice.

Following the regular order of business, the next thing on the program was an address or paper on "Cement," by Mr. Charles A. Matcham, of the Lehigh Portland Cement Co., Allentown, Pa., which is given herewith:

MATCHAM DISCUSSES THE USE OF CEMENT.

The vast uses to which Portland cement has been put in recent years, has brought the Portland cement industries to the front as one of the largest and most prominent industries this country possesses.



IROQUOIS HOTEL, BUFFALO.

In 1890 when the Portland cement industry was in its infancy in this country, 335,500 barrels of Portland cement were manufactured, and during that year 1,940,186 barrels of Roman, Portland and other hydraulic cements were imported. Since that time the production in the United States has largely increased, and the importations for 1902 and 1903 show no material increase over fourteen years ago.

The following are the statistics since 1890:

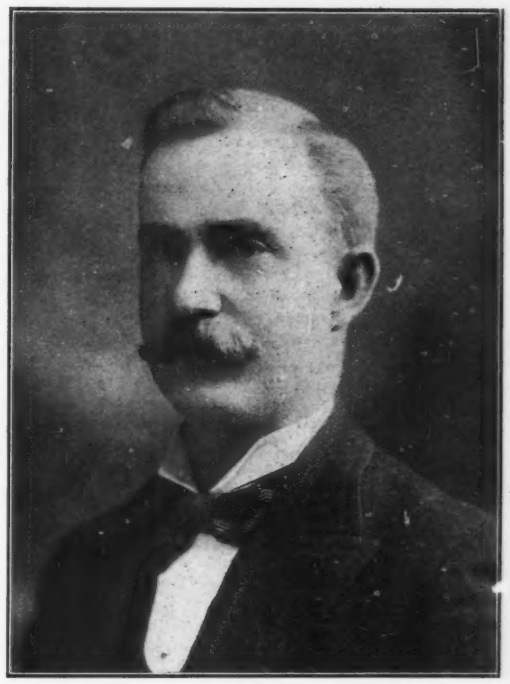
Year.	Home Production of Portland Cement Barrels.	Importations all kinds cem't Barrels.
1891	450,813	2,988,313
1892	547,440	2,440,654
1893	590,652	2,674,149
1894	798,757	2,638,107
1895	990,324	2,997,395
1896	1,543,623	2,989,597
1897	2,677,775	2,090,944
1898	3,692,284	2,013,818
1899	5,652,266	2,108,388
1900	8,482,020	2,386,683
1901	12,711,225	939,330
1902	17,230,644	1,961,013
1903 (Est.)	20,000,000	2,500,000

About 73 per cent of this 20,000,000 barrels was manufactured in the Lehigh Valley; this includes all cement plants within a radius of thirty miles, and located in the Coplay and Nazareth regions in Pennsylvania and Phillipsburg, N. J. There are in these numerous plants some 230 rotary kilns in use.

This growth is due to the American manufacturers, who with capital, brains, push and energy succeeded in making a Portland cement equal to the best foreign brands, and of late, far exceeding them in quality, and the engineers of this country, who have been educated in our colleges and universities, have learned the various uses to which Portland cement can be put, and have not been slow to appreciate the high quality of our product, and have carried out constructions which are far greater in engineering skill than any country in the world dared to undertake.

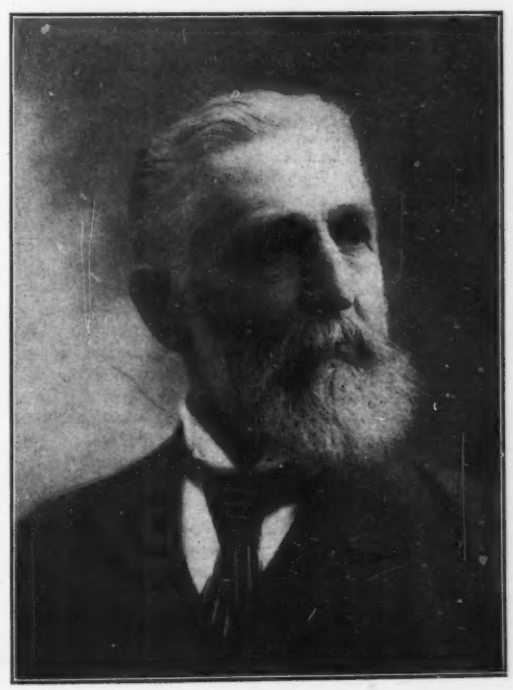
A remark was made not long ago at a cement manufacturers meeting in London. "I hear people say as they said twenty years ago, the use of cement is in its infancy. I believe that in its use we have much to learn from our American friends. We are now learning something of the rotary kiln and its advantages, with it we are producing a better cement and cheaper article."

I am not going to take up your time with our methods of manufacturing, but I wish to say a few words in regard to Portland cement manufactured in different localities. It is considered by a great many that Lehigh Valley cements are superior to all others. A brief explanation is this: The oldest cement plants in the States are there located,



W. S. HUMBERT.

CHAS. C. CALKINS.



M. A. REEB.

thousands of dollars have been spent there years ago in experimental work, until the best machinery and system adopted for making a high-class article. Notwithstanding the raw material is well adapted for making a high-grade cement, it is not to say there are not other materials that will not make good cement. There are large quantities of material found in other States that will give precisely the same analysis in the finished product, and where such materials are found, it is a question of manipulation and arrangement of plant to produce a good article.

If, for instance, proper mixing, drying and grinding machinery are not introduced, the product may be defective. Time and education are then necessary, and this is oftentimes costly. Some plants, while having good raw materials, may have been limited by capital, and consequently have not the best machinery and layouts. Other plants may have good machinery and layouts, but by lack of knowledge and experience, may have poor materials, and can then never be able to produce a good cement.

The question of distributing and selling cement is an important matter which concerns most of us here to-day. This is something which requires time for study and consideration. To be an excellent seller, a man should be well posted on the constituents of cement, what the analysis is, what tests should be, how to test cement in all its branches, and how to use it. To know this, an agent or seller should well post himself as to the methods of manufacturing, and should have thoroughly posted himself on laboratory work, as well as concrete work in all forms. In engaging salesmen, it is as necessary to have a young man who has mde a special study of cement at college, as it is to engage such a man to take up engineering work.

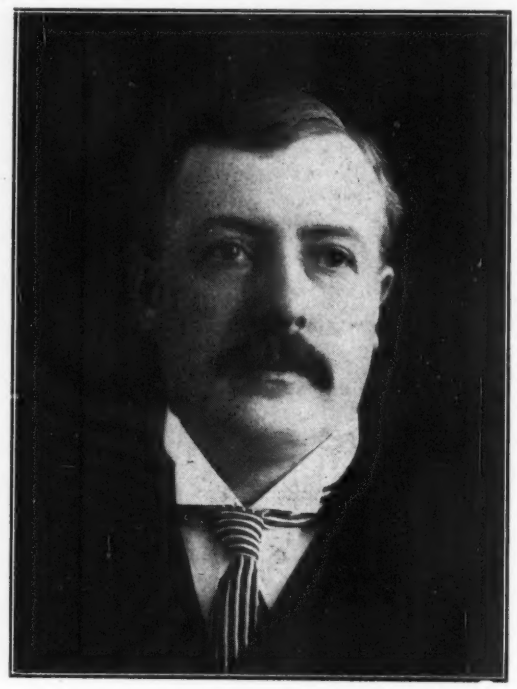
I bring this matter before you for the reason that oftentimes cements are condemned and complaint made to the seller, and through lack of knowledge he has to report the complaint to the manufacturer for investigation, and oftentimes puts them to unnecessary expense and time, which could have been prevented if the agents, or their salesmen, knew something of the method of manufacturing, testing and working of cement. Besides this, a knowledge of the manufacturing and testing will aid him to be a valuable salesman.

A specification for Portland cement has recently been arranged by the American society for testing materials, and probably will be adopted by the Amerıcn society of civil engineers. This should become a universal and standard specification throughout the United States for the Government, architect and engineers. It should be the aim of every seller of Portland cement to push to his fullest ability the use of this specification by every architect and engineer, who at present get out such a variety of specifications, some of which are entirely at variance from what may be considered a good specification.

There are hundreds of various uses to which Portland cement is being put to-day. Amongst one of the many important is house construction. I think it will interest you to know something of the cost for such construction.

I have a blueprint of a concrete house which the Lehigh Portland Cement Co. have just built near their works. This house is built of concrete with walls ten inches thick from basement foundation up. The porch floor is of concrete, a 4-inch slab with expanded metal, and resting on concrete piers. The roof is of expanded metal nailed to wooden joists, set two feet apart, the expanded metal being plastered over 1¼ inches thick with two parts cement, six parts sand and one part lime, with hair as an additional binder. The exposed surface of roof was given a wash of diluted sulphuric acid, and later a wash of vinegar, this being a necessary preparation to make the paint hold to the surface. The roof was then painted a dark red or brick color, which gives a pleasing appearance, and the roof is perfectly water tight. The outside and inside walls are plastered with one part cement, two parts lime and six parts sand. Small wooden blocks were placed in the walls for fastening picture moulding. Below this moulding the walls are painted with bright and pleasing colors, and above the moulding, lighter tints were used. This house was built last December during cold and freezing weather, no extra care being taken to prevent concrete from freezing.

There are 140 cubic yards of concrete in the building, which cost $5.50 per cubic yard: this includes cistern and porch, also labor, excavating and carpentering, studding up; also a fair percentage for loss of lumber. The cost of material is figured as follows: Cement at $1.00 per barrel, the sand at $1.18 per ton, and crushed stone at 60 cents per



CHAS. A. MATCHAM.

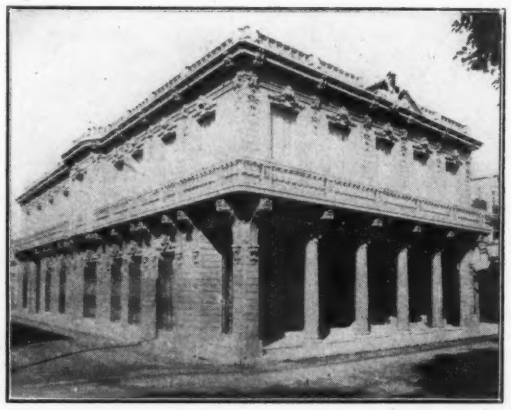
ton. While this price may be low for contractors to figure on, it is a basis for comparison. The cost of this house complete was $2,500.00, or sixteen per cent. cheaper than a similar house in frame would cost, and 25 per cent cheaper than brick.

A more expensive house in concrete is that of Vice President Estevez, of Cuba. This residence was built in Havana last year. I had the opportunity a year ago of inspecting the work while it was in progress. The mouldings, cornice work, window capping, balustrading, stairways, partitions, floors, etc., are all of concrete. Models of scroll work, etc., were made up of clay by the designer, then moulds of Plaster of Paris were made from same; these were fastened in place and the sand and cement mortar poured into these moulds, After staying in place a week or ten days the plaster moulds were removed, the result being a beautiful cast, which no stone mason could excel in appearance out of stone.

Such work as this has been carried out for years in Germany, and other foreign countries. It is just now that we are beginning to experiment with artistic concrete work, and it can easily be foreseen that this line of work alone will eventually consume millions of barrels of cement a year in this country.

In conclusion I would like to say that while the cement business during the past year has given a number of us cementicitis, I believe that we are now convalescent, and that with Spring trade opening up, we shall find a big demand, and at such prices as may be both satisfactory to the manufacturer and consumer.

Following the interesting paper of Mr. Matcham on "Cement,"President Kling arose and said that another interesting subject to the builders' supply men was lime, and he thereupon introduced Mr. Charles Warner, of Wilmington, Del., a well-known factor in the lime trade, and president of the National Lime Manufacturers' Association, who presented an interesting paper on "Lime." Mr. Warner prefaced his remarks by saying that he hoped that



Residence of Vice President Esterez, Havana, Cuba.
Constructed of Concrete with Lehigh Portland Cement.

in the future the National Lime Manufacturers' Association and the National Builders' Supply Association would work closely together for their mutual advantage.

CHARLES WARNER ON LIME AND LIME HYDRATING.

It seems rather presumptuous for me to discuss the lime question before a body of gentlemen who have been studying the matter for many years, but your secretary probably thought that from the manufacturer's point of view I might bring out something a little new, so the responsibility rests on him, and the pleasure is mine.

I will ask you in advance to pardon any references to specific materials, particular those of our own manufacture, which it will be occasionally necessary to mention in connection with tests that have been made on several occasions.

My experience has been largely with lime manufactured in the Eastern part of the United States, and is, unfortunately, rather at variance on some points with reports received from the middle West.

In our office we generally divide lime into two general classifications, namely: High calcium (which we frequently call incorrectly, high carbonates) and magnesium limes. The high calcium limes are frequently called the pure or fat limes and according to the name we have applied to them, generally show in their chemical analyses from 85 to 98 per cent. oxide of calcium. The remaining portion of the high calcium lime is generally composed of small percentages of magnesium oxide, iron and alumina, and silica or sand. The less pure a high calcium lime is, the more nearly it approaches the condition and characteristics of hydraulic lime, and when the percentage of the calcium present shows as low as about 63 per cent., with silica and iron and alumina, forming the major part of the remainder, we have the standard Portland cement composition. All these materials are produced, however, by the burning of rock.

The magnesia lime does not come within the class ranging rrom pure lime down to the Portland cement. Magnesia lime is produced from dolomite rock, and contains about 40 per cent. of oxide of magnesia and about 55 per cent. of oxide of calcium, with a small percentage of impurities. This lime has the calcium oxide as its major element, but it generally classed as a magnesia or dolomite lime to distinguish it from the regular class of high calcium limes It is in the comparison of the different results obtained from the use of these two limes that some difference of opinion seems to exist, though as a matter of fact I have never seen any specific tests to disprove the following information collected during the past twenty-five years by several members of our company.

In slaking, the calcium oxide of any lime is practically all active, by which I mean that it has affinity for water and will chemically combine with about one-third of its weight of water. Water added in excess of the one-third forms only a mechanical mixture with the lime, for the oxide of calcium has no further chemical possibilities in combination with water. Please note this fact, particularly as it has strong bearing on the question of hydrated lime, to be explained later.

In the case of the magnesia or dolomite lime we have this fact which explains many of the differences to be noted between the two limes, namely. that the oxide of magnesia has not, as produced in the commercial manufacture of lime, any chemical affinity for water, and, therefore, so far as chemically combining with water and producing heat is concerned, the magnesium oxide of any lime has no value. To offset these points of disadvantage, however, the oxide of magnesia remaining in lime paste very considerably increases its cementing properties, and as a result should carry, and will carry, so far as Eastern dolomite limes are concerned, a far larger proportion of sand to produce a mortar of any required consistency or strength. This property of the oxide of magnesia, which makes it inert so far as chemical action is concerned, explains the practical results noticed in dolomite limes, wherein a considerably slower rate of slaking and a smaller volume of putty or paste is produced in comparison with the results produced in slaking a corresponding weight of the high calcium lime, but as stated above, this magnesia, though inert in slaking, is very active in setting, and according to tests made by several authorities on the subject. which have been noted in technical papers from time to time, and according to tests which our company has made on several occasions, the magnesia lime will have about 50 per cent. greater strength than the high calcium, or in the case of sand mixtures it will carry about 50 per cent. more sand than high calcium lime to produce a mortar of the same consistency and strength. Even some Western manufacturers, with whom I have been corres-

ponding on the subject, and who claim that the magnesia lime has less strength than the high calcium, do so in the face of tests made on their limes, which prove the contrary, and in case of one published test making such comparison there was shown at least 75 per cent. greater strength in favor of the magnesia lime.

To further confirm these results, I have learned of cementing tests made with pure magnesium oxide, which proved the strength of this material, independent of its association with calcium.

The general difference amounting to about 50 per cent. in strength, or sand carrying capacity, should be more thoroughly analized, however, for it is likely to lead to a misconception of the relative merits of high calcium and magnesia limes.

As stated before, the high calcium lime chemically combines with about one-third its weight of water, whereas, the magnesia lime, owing to its smaller proportion of calcium oxide, will not chemically require more than fifteen to twenty per cent. of water. The practical result is that each pound of magnesia lime will make from one-fifth to one-fourth less paste than a pound of high calcium lime, though the paste would show fully fifty per cent. greater strength if used neat.

Should both limes cost the same, we have the practical condition that where lime is to be used as a paste or neat material, such as for finish coat work in plastering, etc., and when the question of some fifty per cent. greater strength does not enter into consideration, the high calcium is naturally the most economical to use.

But when we come to a consideration of sand mixtures as mortar, etc., we have a reverse result.

While the pound of magnesia lime has absorbed less water and made less paste, yet its greater strength and insulating properties enable it to carry fully fifty per cent. more sand than the pound of high calcium, and still make a mortar of the same strength and as nearly the same consistency and working condition, as the average mason can judge his material.

The net result of less work against more sand gives an efficiency of about 25 per cent. in favor of magnesia limes used in sand mixtures. I have had this point tested out on several of our own limes, both classes, as well as others, and with slight variations the tests have all confirmed these general results.

On the question of working qualities, I feel that we still have a problem largely unsolved, and one that is now occupying a great deal of attention among lime manufacturers and chemical experts. That two limes having exactly the same chemical analysis and composition, should work radically different under the trowel, one spreading as smooth as butter, the other dragging and curling, seems very strange. Yet this is the case, and it only seems possible to explain such action on the general grounds of difference in physical characteristics.

There are, of course, many little things, such as the method of burning and slaking lime which naturally affects the subsequent working under the trowel, but after all is said and done, the problem is still largely unexplained, except on the physical grounds above suggested.

This question of supplying a lime product for all classes of building work that will be satisfactory at all times and under ordinary working conditions, is a most important one. So far as my experience goes, the lime business is fraught with more detailed annoyance and losses due to the characteristics of the material, than is found in handling any other building material. You all know these detailed troubles, and whoever has stopped to analyze their cause, will place over ninety per cent. of such complaints against the well known tendency of quick lime to air slack, and against the inferior results often obtained in slaking lime under ignorant supervision.

Many lime manufacturers have realized for several years that the use of lime should be largely extended if some of its characteristics could be eliminated, and that there were many valuable qualities in lime that should be made more available and useful, should its disadvantages be overcome. This condition naturally led to the development of hydrated lime, of which you have probably all heard more or less within the past few years. I do not claim that hydrated lime, as now manufactured, entirely overcomes all the objections to lump lime, but it is certainly a step—and a most important step—in the right direction.

Its possibilities certainly demand very thorough and careful investigation on the part of all of us. It ranks a purely lime product with cement, hard wall plaster, etc., for hydrated lime is a stable commodity, uneffected by air slacking and subject only to such deterioration in storage as effects cement, etc.

Hydrated lime is produced in a powdered condition, and is no more, nor less, than quick lime treated with just sufficient water to chemically satisfy its demands. If less water be given it, then some free or quick lime will be in the product. If more water be given than chemically required, then excess moisture is present, and it only requires a sufficient quantity of such excess water to turn the product into paste.

It is almost needless to say that there are many ways of treating lime with water to produce a dry hydrate, and from what has been stated before, it is evident that the amount of water required for any lime depends on its proportion of calcium oxide, the only chemically active element of any lime so far as water combination is concerned.

The methods of manufacture range all the way from the very crude plan of turning a hose on a pile of lump lime down to the latest improved and economical system explained as follows:

By first grinding the lump lime down to a uniform degree of fineness it has been found that the water treatment is far more thorough, permitting each particle of water to reach its proportion of quick lime. The material should be handled in batches and each batch of quick lime weighed. The proper weight of water dependent on the chemical analysis of the lime, should then be quickly added and thoroughly mixed. The peculiar changes in the nature of the material while mixing has required the development of special machinery, and the excessive heat developed at this time also requires special fire precautions.

As in the case of slaking a bed of mortar, considerable time must be allowed for tempering and steaming the mixture so that the product will be thoroughly hydrated with no free lime present and a large system of steel lined seasoning vats is necessary for this purpose. Finally the product should be carefully reeled and screened from all free impurities to at least a fifty mesh fineness.

So far as my knowledge and experience goes it is only by following the different steps of manufacturing hydrate, as just described, and by carefully watching each step to be sure of thoroughness in this operation, that a uniform product, absolutely safe, can be produced. It is certainly a long step between the old hose method and the latest arrangement in uses, and I wish you to all fully appreciate that to make a hydrated lime right and absolutely safe that it takes not only a plant involving considerable expense in its erection, but that care must always be exercised in the operation of that plant if a standard, uniform product is to be made at all times.

Of course, there are many methods of manufacturing hydrate coming between the extremes just mentioned, and they probably all have different degrees of merit and demerit according to the thoroughness of the manufacturing principles, and the care exercised in operation.

I do not wish you to assume from what I have stated that it is so hard to make a hydrated product that a material, satisfactory at all times, would be hard to obtain. The expensive grinding and burning machinery used in the manufacture of Portland cement has been developed owing to the demand for the product, but the product can only be made uniform by constant and thorough supervision in all of its departments every day, in fact every hour of the day, and this demand has developed a class of engineers and experts that produce Portland cement of uniform quality. The same will be so of hydrated lime as the industry develops, and the necessity for care is fully appreciated. The necessity of following these important points carefully is already appreciated by some six or eight manufacturers of hydrate in the United States, so that it can be said so far as safety is concerned, the material is now being produced in certain plants to meet the fullest requirements.

I will now take up some of the important uses of hydrate, which are being tested and developed owing to this new form of lime.

1. Hydrate of lime makes feasible and economical the preparation of any mixtures in a dry mortar condition, and ready for immediate use by only the addition of water. This condition of development has already been reached in the sale of hard wall plasters and has been one of the important reasons why hard wall plasters have made such headway in the large cities where economy of space and time is a very important feature.

2. In the mixture of hydrate of lime with Portland cement we have other advantages of importance—the smoother working of such a mortar under the trowel gives greater spreading qualities and accelerates the work to a marked extent, as will hereafter be noted.

3. The use of lime in any of its forms in any cement job is a decided benefit in making more water proof and impermeable to moisture the finished work, and it has been claimed by several authorities that lime properly worked through a cement mortar should replace any of the special materials now sold on the market for such purposes.

You have probably thought that some of these advantages could be obtained by the use of ordinary lump lime, but the question of mixing the lime and the cement together is one requiring economy and thoroughness, otherwise the mixture would not be used; and it is largely by the use of hydrated lime that such mixtures are made available and safe. A contractor will not go to the trouble of slaking out a bed of mortar from lump lime and of mixing it afterwards with Portland cement with the attending uncertainty of exact proportions, freedom from quick lime, etc., but if he can use the hydrated product weighed out in bags, requiring no lost time in slaking, or better still, if he can obtain the cement and the hydrate ready mixed in the dry condition, an inducement is offered to make it worth his while to take up the lime question.

We have made many tests to determine the strength and value of mortar made with such mixtures, and it has certainly been proven in many cases coming under our notice that such a mortar is decidedly more economical for a contractor to use than a pure cement mortar.

If Portland cement and hydrate of lime are mixed in equal proportions the mixture can be used as a cementing material to make a mortar of any strength reasonably required, and will equal the strength claimed by the use of Rosendale cement mixed with an equivalent proportion of sand. It will not only produce as good results in short time tests, but it will show in long time tests, extending over a period of a year, a percentage of increase not found in any cement tests.

Booth, Garrett & Blair, of Philadelphia, have made their tests on such mixtures showing an average increase between three months and one year of over fifty per cent., thereby attaining ultimate results largely in excess of any obtained by Rosendale cement. The large advantage to a contractor in the use of such a mixture is to be found in the greater efficiency of labor resulting from the freer spreading qualities imparted by the lime. We have had contractors' statements made voluntarily showing an increased brick-laying efficiency amounting to from sixty to eighty per cent. On one job in particular, Rosendale cement mortar was tested side by side with a Portland cement-hydrate mortar. The different bricklayers working the Rosendale mortar were averaging about 800 bricks per day, whereas the bricklayers using the hydrate-Portland were laying from 1,200 to 1,400 bricks per day. What this means to the contractor is easily understood. To offset this efficiency in labor we, of course, have to consider an increase in the cost of material, but the net result shows decidedly in favor of a hydrate-Portland mixture.

The results accomplished above were obtained by the use of limoid, a hydrated lime, manufactured by the Cedar Hollow Lime Co., of Eastern Pennsylvania, but results more or less similar should be obtained by the use of other hydrated limes where proper care is exercised in their manufacture.

As has been stated before, in the manufacture of hydrated lime it is essential that the proportions of water and lime should be very carefully gauged and watched, and to show the necessity for this it is desirable to point out the result obtained should the hydrated lime be improperly balanced in a chemical sense. Should the percentage of water be deficient, and some free or quick lime present, an unsafe product is certainly the result, for the presence of free lime in both cement and hard wall plasters, produces troubles that are too well known to require explanation. Should the amount of water be in excess of what is chemically required to satisfy the quick lime, we find free moisture present in the product, which not only means that the customer is paying for water to the extent represented by such excess, but it also means that every one per cent. of such excess water has the possibility of satisfying and, therefore, rendering inert five per cent. of any Portland cement that may be mixed with it to form a dry mortar.

Should the excess moisture present in a hydrated lime show from three to six per cent., the amount of lost value resulting in a half and half mixture of hydrate and Portland cement can be readily figured. These excesses particularly point out the necessity of care in manufacture of any hydrated lime. As I consider the mixture of Portland cement with hydrated lime one of the biggest possibilities in the development and extension of the lime business, both for regular mortar work and as a hard wall plaster, you can understand why I

have dwelt so strongly on the great care which must be used in the manufacture of the hydrate.

As a hard wall plaster such a mixture appeals strongly to the contractor on the ground that it employs the use of Portland cement, which has by all odds the best long time test for durability and increasing strength. The tests of Booth, Garrett & Blair, previously mentioned, show the amount of this increase in strength over the period of a year in a most gratifying way. As a hard wall plaster this mixture is not subject to atmospheric changes (heat and moisture) and it is claimed by many that a much more dense wall and ceiling is the result, which gives an additional value from a sanitary point of view. This last point is really the same quality of impermeability to moisture, mentioned before.

In conclusion I might add that the development of hydrated lime has opened up many additional possibilities in the way of its uses for chemical processes, etc. If the hydrated product be properly screened, it naturally eliminates most of the free impurities to be found in the lump lime from which it is made, which naturally produces a purer product than the original lump lime. This is so for the reason that only the pure lump lime will hydrate, and any of such impurities as unburned stone, free sand, cinder, ash, etc., will be naturally eliminated if the screening of the hydrated product is carried to the proper degree of fineness. By the use of air separation recently introduced in connection with the manufacture of hydrate, it is now possible to secure an absolutely impalpable powder. The air separating system being employed by their air flotation principle will produce a product obsolutely free of grit or any foreign substances that may be dangerous in special chemical processes, and this super-fine product also has many valuable uses as a filler in grease, paints, etc., which has induced its sale along these lines.

It would appear that there should be considerable small trade for such a grade of material that the dealers in the different localities could pick up by a little canvassing, and thus add to their regular lines, a lime specialty which should be handled at considerable profit.

The next thing on the program was an address on "Sand-Lime Brick," by Mr. L. F. Kwiatkowski, of New York City.

Following this was an interesting paper from J. A. Ferguson, president of the American Hydraulic Stone Co., Denver, Col., who was unable to be present, but requested that Mr. W. K. Squier, secretary-treasurer, of the Paragon Plaster Co., Syracuse, N. Y., read his paper to the meeting, which he did, and it is reproduced herewith.

FERGUSON TALKS HALL CONCRETE BLOCKS.

Gentlemen: Architects, engineers, builders, and all directly or indirectly connected with the building operations, are becoming more and more alive to the possibilities of cement concrete construction, and are watching with interest the development which the concrete building block for wall and partition construction is undergoing.

It is with this material that I propose to deal in this paper, as I believe that this product is well worthy of the serious attention of the members of this association, and it is my purpose to particularly notice the two-piece concrete block that, when laid, makes a hollow wall with air spaces all through, both horizontally and perpendicularly, being practically two separate and independent walls bonded together by what appears to be the strongest bond that can be built.

The advantages of a hollow wall, for dwellings especially, are that heat and cold, owing to the non-conductivity of the air in the hollow space, is largely prevented from penetrating through the wall, thus giving an interior warm in winter and cool in summer that is not obtained with solid brick or stone wall, or with one-piece concrete wall having webs extending through it. With the air space continuous, as is the case with two-piece concrete, moisture is entirely prevented from penetrating the wall, thus giving a dry, and hence hygenic and sanitary building.

These advantages, providing the block can compete successfully in price with other building material, must establish concrete building blocks as a factor, in the building business, which has come to stay, and which must be recognized as a competitor with the more generally used building materials, such as brick, stone, and even frame, as we shall see later.

An important factor is the composition of the concrete used in its plasticity in mixing, as upon this depends the strength and density of the stone and cost of manufacture.

As is well known a mixture of sand, cement, broken stone or gravel in such proportions that the voids are all filled, well mixed with just sufficient water to fully set the cement, is the ideal mixture. This amount of water can be determined closely enough for practical purposes by following the usual engineering specifications, namely: ("Sufficient water so that when the mixture is well tamped it will not quake but water will just flush to the surface.")

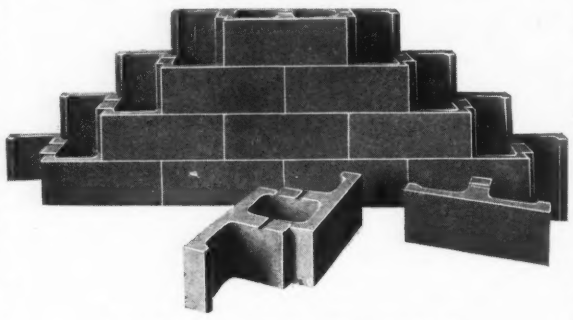
Insufficient water does not develop the full strength of the cement, whilst any large excess of water must be gotten rid of by evaporation; which is evidenced in smooth finished work by unsightly hair or crazing cracks developing on the surface.

The hand tamped sand and cement one-piece hollow block is practically and commercially successful, but is hampered by certain deficiencies which it is necessary to notice here.

The class of machines producing this block have generally removable center cores and wing plates. In the mould, so formed, one is compelled to use a dampened mixture of cement and sand not having sufficient moisture for the proper crystallization of the cement. This is necessitated by the fact that the cores have to be withdrawn after the material is tamped and formed, and if it were wetter it would break or slough away whilst the core was being withdrawn.

Blocks so made are in need of moisture as they come from the mould, but it can not be given them for at least twenty-four hours until the block has become sufficiently hardened to withstand it. The resulting material is cemented sand, which is very porous and has a crushing strength of not over 1,200 pounds per square inch.

The webs go clear through the wall, and capillary attraction will carry moisture to the inner surface, thus making it unsafe to plaster without furring, and if furring is applied sufficient dampness is carried through in time of a driving storm to



Some Samples of Hollow Concrete Blocks.

make a damp wall to the injury of plastering, decorations and the health of inmates.

This mixture must of necessity be high in cement, averaging one part of cement to four and one-half parts of sand, making a very expensive mixture.

In laying this one-piece wall end to end, there is no cross bond or header, and can best be illustrated by placing bricks lengthwise in rows above each other without headers. Another serious objection to this one-piece wall is that it can not be practically faced with a small quantity of fine material, using coarse material for the body of the block. To apply a facing to the one-piece wall different from the material used throughout the body of the block, a tin or sheet iron partition must be inserted and the facing material tamped on the one side and the coarser material on the other, the tamping being necessarily unevenly distributed. When the partition is withdrawn, it is found that the face is not satisfactorily bonded to the body of the block.

Another objection that might be noted is the weight of these blocks. As usually made, each one weighs 160 pounds and requires two men and a lever to remove them from the mould when they are deposited on the ground. Again, they have to be removed in a like manner to the yard and stacked up, and to place them in a building a derrick is almost necessary.

To overcome the objections noted, a block for a two-piece wall has been perfected and placed on the market by The American Hydraulic Stone Co., of Denver, Col.

This block is well protected by patents. All the practical patents that have ever been issued in the United States patent office on a two-piece wall are owned or controlled by that company; the basic patent is guaranteed both offensively and defensively by the Patent Title and Guarantee Co., of New York, of which Gen. Paine, late Commissioner of Patents, is at the head.

I have here some wooden models of this block, which will serve to illustrate the bonding principle, and it will be observed that there is a strong and rigid cross bond every twelve inches through the wall. It will be noticed that the more a wall containing this bond is loaded, the stronger the bond becomes.

The examples of this wall that I have seen show remarkable strength and lateral rigidity. In a large office building being constructed of this material by the National Electric Co., in Milwaukee (the material being made by them on the ground), I observed a three and a half inch partition wall, which contained one and one-quarter inches of air space. The rigidity of this three and a half inch wall, although incomplete, was astonishing and is of course due entirely to the strength of the bond the wall contains. Even this partition wall contained a thirty per cent. air space in the perpendicular and a quarter inch air space through the wall horizontally, while the larger walls of the building contained fifty-five per cent. of space. I also noticed in the building a five-inch wall that was used for certain partitions, and there is no question in my mind but that such a wall is amply strong for the outer walls of two-story cottage construction.

The blocks are made in oak, galvanized iron lined, moulds, the face side up, and are compressed under heavy pressure, which enables the block to be taken immediately from the mould, when it is put upon a cheap car holding one hundred blocks, which car when full is run to the other end of the shed, where it remains for twenty-four hours, when the blocks are sufficiently hard to be run into the yard and stacked up. These stacks of blocks, containing, say $5,000, are for seven or eight days kept moist with a lawn sprinkler placed overhead which automatically plays upon the stack whenever necessary; never during the seven or eight days should they be allowed to dry out. They are then ready for the wall.

I have here used a small model of a mould which shows the process used. If the block is intended for plain work and not to be faced, the mould is filled with rough coarse concrete, the coarsest of which would go through an inch screen. The proportions should be one part of cement to three of sand and five of gravel or broken stone, with the correct proportion of water. After the mould is filled, which is either done by a shovel or a chute from above, a gauge is used to strike off the material level with the top of the mould. The pressing board is then put on, pressure made, and as the mould is pulled out of the press, it is turned over, releasing the block, the one movable side of the mould clamped and refilled. If faced blocks are being made, after the mould is filled a gauge is used raking out one-quarter inch out of the top of the mould. This space is filled with a one to three mixture of fine sand and cement, striking it off level with the top of the mould, and the pressure made as before.

It will be seen, therefore, that all the conditions for securing the best results are followed in making this block; with the result that although one part of cement to about seven of aggregate is used, a mixture low in cost, having a crushing strength of from 2,500 pounds per square inch is secured.

You will note that any desired facing may be put on during the process of manufacture, one quarter inch only being used. This facing may be colored as desired in any color that can be obtained from using iron pigments, which will not fade.

By the use of fine white sand or marble dust, a stone equal in appearance and color to that of natural hand-rubbed unpolished white marble is obtained. As the facing is added before pressure is applied, the bond through the body of the block is therefore perfect and can be finished by the impression given by the pressing board, such as rock faced, tooled, rubbed, corrugated, or any other desired pattern.

If properly made, the block is absolutely impervious to water, but a dry interior of the building is also insured by the continuous air space in the wall, secured by not laying up the butting ends in mortar, simply the top of each course is bedded in cement mortar.

Mr. Frank E. Kidder, formerly professor of architecture in the Boston School of Technology, and author of "The Architects' and Builders' Pocket-book," etc., who is associated with the American Hydraulic Stone Co. as consulting engineer, states that the saving in fuel during the winter in a dwelling house of this construction will not be less

than 25 per cent., due entirely to the continuous air space in the wall.

The block can be turned out with great rapidity. Tests in Chicago recently made with a hand press showed that four men at the press and two men mixing concrete, could turn out fifteen hundred blocks per day, which is equivalent to the same number of square feet of wall in blocks 12x24 inches, or 9x32 inches.

With the power press furnished by this company, they guarantee that using six men at the press emptying and filling moulds and one at the power mixer, a product of 2,000 square feet of wall can be produced in a ten-hour day. By using more men in emptying and filling moulds, any product up to 10,000 square feet per day can be produced with their power press. Comparing this with 750 square feet of wall with nine men (the best average output of the hand tamped one-piece wall process before mentioned), shows a great saving in the labor of production, and 40 per cent. less material is used.

In the cost of manufacture and equipment of a plant, the machinery is inexpensive, consisting of a press and set of moulds, and no expensive buildings are required—simply sheds sufficiently warmed in winter to prevent the blocks freezing for the first four days, after which time the frost does not injure them.

Mr. Kidder has prepared a statement showing the cost per square foot of wall under this two-piece wall system and has drawn a comparison with the cost of brick, which is conservative as to cost of labor, material and output.

For 10-inch wall construction, each square foot of wall weighs 57 pounds and requires:

Cement, 4⅔ lbs. (1 to 8) at $2.00 per bbl...	$.02½
Sand and gravel .45 cubic foot at $1.00 per cubic yard	.01⅜
Common labor at $2.00 per day (10 hr.) 9 men (6 at the press, 1 at power mixer, and 2 unloading cars and stacking up blocks) turn out with one power press 2,000 square feet of wall per day, per square foot	.01
Total per square foot of wall.....	$.05⅛
The cost of laying the blocks varies from 7 to 10 cents per square foot of wall....	
Hauling, per square foot of wall.....	.01
Additional for faced blocks, per square foot of wall	.00⅜

In above computation, no allowance has been made for superintendence, water or power.

Electric power averages about $15.00 per month.

The inside blocks, being almost always unfaced, can be made up in quantities as occasion offers, and special faced blocks for the outside of the wall may be made as needed. The above cost may be materially reduced if more men are used and the press run to its full capacity of, say, 10,000 square feet per day.

The following comparison between the cost of the product of The American Hydraulic Stone Co. and the cost of a brick wall has been made by Mr. Kidder; figuring common brick at $12.50 per thousand in the wall and pressed brick at $30.00 per thousand, making no allowance for cut stone trimmings, the result is as follows:

	9-inch wall.	13-inch wall.	17-inch wall.
Cost per square foot of wall built of common brick with pressed brick face as per above figures	39¾	.49	.58½
Cost per square foot of hydraulic stone for 10 inch faced wall, replacing brick up to 17 inch in thickness, allowing 8 cents per square foot for laying and 1 cent for hauling	15⅛	.15⅛	15⅛
Profit per sq. ft. over brick...	24⅝	.33⅜	.43⅛

The foregoing figures are surely interesting and indicate a prosperous future for this form of construction.

Further advantages might be noted—principally the rapidity with which the blocks can be laid in the wall, being easily handled by one man.

Several important buildings have been erected, as shown in the company's prospectus. Perhaps one of the most interesting is a four-story hotel building at El Paso, Texas—completed last fall—in size 100 feet square. Above the first story, which is on cement piers, the entire walls are nine inches thick. Another hotel building is now being erected at San Diego, Cal., to cost $400,000.00.

Mr. Kidder has made certain statements regarding this construction, which it may be interesting here to quote.

He wrote: "Regarding the practicability of this block for average building construction, I believe it to be the most practicable of all cement block construction, both on account of the process of moulding and facility for laying in the wall. The blocks are very strong; a wall 2,200 feet high could be built of them before the bottom blocks would crush under their own weight—the method of bonding makes the wall as solid as if cast in one piece, without the disadvantage of poured construction. Any stone or brick mason can set the blocks and they can be readily adapted to any ordinary construction."

And again he wrote: "I may say that these blocks are perfect, making a stone in my judgment equal to the best natural stone and much better than the average building stone. The surface of the block is uniform and equal in appearance to the most carefully cut natural stone. I have no hesitation in saying that the two-piece wall is, in my judgment, the best masonry construction that can be built."

And again he wrote: "There is no question but that your ten-inch wall, laid in cement mortar, has ample strength for three-story construction, and your fifteen-inch wall for six story. I have been especially impressed with the rigidity of the walls of buildings that I have examined, which are constructed of your material, which is remarkable."

The next order of business on the program was an address by Mr. Addison H. Clark, of Wm. Wirt Clark & Son, Baltimore, Md., on "Association." Mr. Clark prefaced his remarks by saying he felt like the Chinaman who lost his face, then told of Secretary Kind taking advantage of him and putting him on the program.

ADDISON H. CLARK ON ASSOCIATIONS.

Many years ago, farther back than I can remember, some of the early ancestors of the Chicagoans formed an association to build a great city not many miles from the far famed city of Bagdad in Arabia. Their most notable building was an enormous sky scraper built entirely of brick, laid in asphaltum cement, and large enough to accommodate the entire population of this immense city should there be any sudden rise in the river Euphrates.

They had an excellent organization, and for a time they were quite successful in working out their plan to make this the greatest city in the world.

In the midst of their operations a strange disease attacked them which so affected their speech that they could not understand one another and they were compelled to abandon their project and were scattered abroad all over the earth.

This undoubtedly proved to be a very fortunate occurrence by which the enterprising descendants of these original settlers have been developing the vast hidden resources of all lands from the tropics to either pole.

Finally the power of the Roman Empire extended over all the known world and one common language was spoken by all the court officers, thus preparing the way for the Kingdom of Peace at the beginning of the Christian Era, which we are told is in time to extend through all the earth, when wars shall finally cease and the sword shall be beaten into the plow share.

Evidences of this tendency are already visible. The world is growing smaller day by day.

The marked advancement of this movement to unite the nations of the world began scarcely one hundred years ago, with the application of steam and the harnessing of electricity. Now we have the flying machine and wireless telegraphy. What will not the World's Fair at St. Louis develop?

The tendency of the times is toward the formation of combinations of capital for economic purposes, the union of labor for the advancement of the cause of the working man, the association of men and women to advance ideas, for the dissemination of knowledge, for private and public welfare.

One might as well attempt to stop the Falls of Niagara in their majestic course as to attempt to stop the formation of combinations of individuals for personal ends.

This is part of the scheme to bring together the nations of the earth.

Competition in trade will play an important part as a means of disarmament. *War is expensive.* It is rapidly becoming burdensome.

The Hague Peace Tribunal reveals the attitude of European nations in this respect.

In the United States one soldier is supported by 1,000 people, while in France this burden must be carried by only sixty-six of the population.

Our ability to compete in the markets of the world is made possible by the low cost of living, the small burden of war taxation per capita.

The United States is going by leaps and bounds into the markets of the world.

It is a significant fact that steel rails are being shipped from Baltimore to Europe and the far East.

The formation of associations may be likened to the embryology of the oyster.

During the spawning season millions of eggs and male germs are thrown out into the water by the oyster.

When a male germ comes in contact with an egg it is at once absorbed by the egg and a new life of activity begins.

We are sometimes startled by the statement that the air we breathe is filled with germs.

(These intensely active wrigglers called germs in Germany and parasites in Paris, are said by Pat to be called Mike-robes in Ireland.)

Germs exist in the spiritual world as well as in the physical world.

Ideas are germs, which, when absorbed by the gray matter of the brain begin a new life of activity.

When two or more individuals unite to develop an idea an association is formed having constitution and by-laws—thus making a complete organization in which to develop the idea.

These germs move with rapidity exceeding that of electricity, as may be shown by the study of mental telegraphy.

The life of an association depends upon the value to the individual members of the idea that brings the association into being.

The success of the association depends upon the good will of the members.

The idea that brought into life The National Builders' Supply Association was the recognized need of protection on the part of supply dealers, from those manufacturers who ignore the jobbers and sell direct to the contractor and consumer.

The greatest stroke of diplomacy was the taking of the manufacturers into our confidence and receiving them into our organization as honorary members.

Let us have ever before us the motto: "United We Stand, Divided We Fall."

The possibilities of usefulness of our organization are immense, beyond computation, but are directly dependent upon the active co-operation of every individual member.

The combined purchasing power of our organization is rapidly assuming vast proportions which may in the near future be turned to good account.

To illustrate the power of associated effort we are reminded in the Bible of the saying, "One shall chase a thousand and two shall put ten thousand to flight."

Now in ordinary mathematics we learn that in cubical contents, one and one are two, but in the potential possibilities of united human activity, one and one are ten.

Just in proportion as our members accept and work upon this principle will the strength and value of our association increase and we may look forward to an organization of the future whose influence shall be world wide.

After the reading of Mr. Clark's paper the general session adjourned for the day and every one was requested to remain in their seats because there was a photographer on hand who wished to take their picture. In this case, as in nearly all others, there was great difficulty, owing to the great modesty of many, in getting the people well bunched together so as to get a good picture of everybody.

The announcement was also made that the sewer pipe men would hold a little session in the evening, at which time a heart to heart talk was made between the various manufacturers and dealers of lime and some misunderstandings were straightened out. This was not a lengthy session at all, and soon adjourned to the lobby of the hotel and various portions of the city.

WEDNESDAY'S SESSIONS.

The delegates were up early. King storm had delayed all the trains, still there was an increased attendance on that day At 9:30 the joint meeting of cement manufacturers and dealers was entered into quite heartily, and business was soon dispatched.

The executive session consumed the rest of the morning, taking up reports of committees, acting

on same and the election of officers. The following officers were re-elected for the ensuing year:

President, John A. Kling, Cleveland, Ohio.

Vice presidents were elected by States: C. E. McCammon, Cincinnati, Ohio; W. S. Humbert, Buffalo, N. Y.; W. T. Bradley, Philadelphia, Pa.; J. G. Lincoln, Boston, Mass.; A. H. Clark, Baltimore, Md.; Gordon Willis, St. Louis, Mo.; E. M. Baltes, Ft. Wayne, Ind.; C. P. Flatley, Green Bay, Wis.; S. D. Lincoln, Washington, D. C.; Ambrose Tompkins, Newark, N. J.; G. J. Park, Decatur, Ill.; Owen Tyler, Louisville, Ky.; E. E. Evans, Bay City, Mich.; R. W. Marshall, Wheeling, W. Va.

Treasurer, J. N. Thayer, Erie, Pa.

Secretary, Richard Kind, Toledo, Ohio.

The executive committee was re-elected which consists of C. H. Little, Detroit, Mich.; A. B. Meyer, Indianapolis, Ind.; C. W. S. Cobb, St. Louis, Mo.; Frank S. Wright, Chicago, Ill.; D. J. Kennedy, Pittsburg.

The committees appointed were:

Nominating—T. D. Eichelberger, Dayton, Ohio; Wm. Holst, Toledo, Ohio; Chas. H. Classen, Baltimore, Md.

Demurrage—E. C. Kissinger, Columbus, Ohio; Chas. E. McCammon, Cincinnati, Ohio; Henry Angel, Cleveland, Ohio.

Delivery of Freight—W. T. Bradley, Philadelphia; Jesse Haas, Pittsburg; E. E. Evans, Bay City, Mich.

New Members—Marion M. Allen, Newport, Ky.; Walter T. Bradley, Philadelphia; H. J. Conkling, Cincinnati, Ohio; Contractors & Builders Supply Co., Cincinnati, Ohio; James A. Davis & Co., Boston, Mass.; H. A. Fisk, Elmira, N. Y.; H. Houghton, Detroit, Mich.; The Kelly Island Lime and Transport Co., Cleveland, Ohio; Luther Keller, Scranton, Pa.; P.B. Morrison & Son, Findlay, Ohio; Moores Lime Co., Cincinnati, Ohio; Murry Bros., Allegheny, Pa.; McCrady Bros. Co., Braddock, Pa.; The National Builders Supply Co., Baltimore, Md.; Syracuse Stoneware Co., Syracuse, N. Y.; Wheeling Wall Plaster Co., Wheeling, W. Va.

New Honorary Members—Akron Vitrified Clay Manufacturing Co., Akron, Ohio; Buckeye Portland Cement Co., Bellefontaine, O.; Consolidated Rosendale Cement Co., New York; Clinton Metallic Paint Co., Clinton, N. Y.; Duquesne Fireproofing Co., Pittsburg; East Ohio Sewer Pipe Co., Irondale, Ohio; Edison Portland Cement Co., New York City; The Granite Clay Co., Akron, Ohio; H. Huennekes Co., New York City; The National Roofing Co., Tonawanda, N. Y.; J. D. Owen & Son, Owen, Ohio; Pennsylvania Cement Co., New York City; The Robinson-Graves Sewer Pipe Co., Uhrichsville, Ohio; Ricketson Mineral Paint Works, Milwaukee, Wis.; The Robison Clay Product Co., Akron, Ohio; Sandusky Portland Cement Co., Sandusky, Ohio.

Committee appointed to confer upon the cement situation—F. S. Wright, C. W. S. Cobb, ——— Lincoln, Ambrose Tompkins, Walter Bradley, C. H. Little.

Committee on Railroad Reciprocity—Clark, Walton and Willis.

Mid-Summer Meeting—Leggett, Angel and Moores.

Officers' Recommendations—Bradley, Davis and Reeb.

Adjourned.

SIDE TRIPS

The elements, the entertainment committee, Niagara Falls and the ladies, had a troublesome time, Tuesday afternoon, but owing to the thoughtfulness of the Buffalo entertainment committee, the wind blowing a real live New York State blizzard only retarded progress in showing the ladies in attendance at the Builders' Supply Meeting, an enjoyable trip to the Falls, and especially the wild Gorge Route. Those making the trip were: Mrs. C. H. Classen, Mrs. Walter T. Bradley, Mrs. D. J. Kennedy, Mrs. H. P. Boyd, Mrs M. A. Reeb and Miss Laura and Miss Stella Reeb, Mrs. J. H. Ross, Mrs. Chas. C. Calkins, Mrs. W. T. Akers, Mr. Wm. T. Humbert, Mr. Chas. C. Calkins, Mr. M. A. Reeb, members of the entertainment committee; Mrs. Alfred Akers.

The afternoon of Wednesday was spent in a good old stag party on board three interurban cars; being in the hands of our friends, the entertainment committee, we were perfectly satisfied to get aboard, but even the dignity of the ROCK PRODUCTS man was somewhat disturbed, owing to the hilarity of the delegates on this excursion. When you come to mention the managers that have personally conducted tours, don't forget that W. S. Humbert is a prince in this line. He piloted the ladies to Niagara Falls and through the gorge trip, and gave them some experiences that were not on the bill of fare. The ladies say that he can make an hour seem shorter than any one they know of, especially when the cars were stuck in a snow drift. Any man who can conduct twelve or fifteen ladies through such a trip as that, with numerous transfers from car to car, with uncertain delays and have them come home well pleased and comfortable, certainly deserves much credit.

THE ATTENDANCE.

James H. Ross, Buffalo, N. Y.; J. H. Ross.

M. A. Reeb, Buffalo, N. Y.; M. A. Reeb.

W. S. Humbert, Niagara Falls, N. Y,; W. S. Humbert, Inc.

Charles C. Calkins, Buffalo, N. Y.; J. B. King & Co.

George H. Albertson, Pittsburg, Pa.; Duquesne Fireproofing Co.

E. L. Devore, Pittsburg, Pa.; Duquesne Fireproofing Co.

C. H. Little, Detroit, Mich.; C. H. Little Co.

S. V. Peppel, Louisville, Ky.; ROCK PRODUCTS.

Richard Kind, Toledo, Ohio; The Toledo Builders' Supply Co.

John A. Kling, Cleveland, Ohio; The Cleveland Builders' Supply Co.

D. J. Kennedy, Pittsburg, Pa.; D. J. Kennedy Co.

H. S. West, Toledo, Ohio; Assistant Secretary.

A. B. Meyer, Indianapolis, Ind.; A. B. Meyer & Co.

Frank S. Wright, Chicago, Ill.; The Meacham & Wright Co.

H. W. Calkins, Buffalo, N. Y.; with M. A. Reeb.

A. C. Horn, New York City; Gross & Horn.

Lovell H. Carr, New York City; The Edison Portland Cement Co.

Leslie J. Bennett, Buffalo, N. Y.; Buffalo Cement Co.

John Ayrault, Tonawanda, N. Y.; The National Roofing Co.

A Picture of the Builders' Supply Gathering taken just at the adjournment of the Joint Session.

E. H. Defebaugh, Louisville, Ky.; ROCK PRODUCTS.
Alfred W. Thorn, Buffalo, N. Y.; Thorn Cement Co.
Walter T. Bradley, Philadelphia, Pa.; Walter T. Bradley Co.
W. K. Squier, Syracuse, N. Y.; The Paragon Plaster Co.
Charles L. Johnson, Castalia, Ohio; Castalia Portland Cement Co.
William T. Leggett, Pittsburg, Pa.; W. T. Leggett Co.
E. B. Stanley, Clinton, N. Y.; Clinton Metallic Paint Co.
Luther Keller, Scranton, Pa.; Luther Keller.
C. S. Bigsby, Cleveland, Ohio; Garry Iron and Steel Co.
Elihu Harpham, Akron, Ohio; Buckeye & Summit Sewer Pipe Co.
H. H. Gibbs, Akron, Ohio; Buckeye & Summit Sewer Pipe Co.
Jesse H. Haas, Pittsburg, Pa.; Houston Bros. Co.
A. C. Houston, Pittsburg, Pa.; Houston Bros. Co.
F. W. Owesney, Irondale, Ohio; East Ohio Sewer Pipe Co.
J. P. Carlile, Columbus, Ohio; J. P. Carlile.
R. S. Rhodes, Columbus, Ohio; American Sewer Pipe Co.
E. C. Kissenger, Columbus, Ohio; E. C. Kissenger.
S. G. Webb, Columbus, Ohio; Ohio Hydraulic Stone Co.
John W. Eichelberger, Dayton, Ohio; T. D. Eichelberger & Son.
W. M. Adelberger, Dayton, Ohio; Star Coal and Cement Co.
A. E. Bradsbaw, Indianapolis, Ind.; Indiana Mortar & Fuel Co.
G. H. Gengnagel, Dayton, Ohio; Schaeffer & Gengnagel.
J. O. Freeman, Pittsburg, Pa.; American Sewer Pipe Co.
E. S. Walton, Youngstown, Ohio; Youngstown Ice Co.
W. G. Hurlbert, Niles, Ohio; The Bostwick Steel & Lath Co.
P. B. Beery, Sandusky, Ohio; Sandusky Portland Cement Co.
Charles Schmutz, Youngstown, Ohio; The Brier Hill Iron & Coal Co.
Charles H. Classen, Baltimore, Md.; Maryland Lime & Cement Co.
Addison, H. Clarke, Baltimore, Md.; Wm. Wirt Clarke & Son.
William W. Hoffman, Lorain, Ohio; South Lorain Coal & Supply Co.
George T. Whitmore, Akron, Ohio; The Granite Clay Co.
W. S. Griswold, Cleveland, Ohio; The Elyria Wood Plaster Co.
Harry W. Classen, Baltimore, Md.; Maryland Lime & Cement Co.
Ambrose Tomkins, Newark, N. J.; Tomkins Bros.
L. F. Foster, Syracuse, N. Y.; Syracuse Stoneware Co.
A. Y. Reid, Cincinnati, Ohio; The Contractors' Builders' Supply Co.
Charles F. O'Donnell, Bellefontaine, Ohio; Buckeye Portland Cement Co.
Gordon Willis, St. Louis, Mo.; Hunkins-Willis Lime & Cement Co.
George B. Christian, Jr., Marion, Ohio; The Norris & Christian Stone & Lime Co.
D. L. Mather, Richmond, Ind.; Mather Bros. Co.
W. W. Coney, Cincinnati, Ohio; The Coney Supply Co.
H. L. Weber, Richmond, Ind.; City Engineer, Richmond, Ind.
F. Lawson Moores, Cincinnati, Ohio; The Moores Lime Co.
H. P. Boyd, Baltimore, Md.; National Building Supply Co.
C. W. S. Cobb, St. Louis, Mo.; Glencoe Lime & Cement Co.
C. A. Kimball, New York City; Atlas Portland Cement Co.
C. M. Foster, Chicago; Meacham & Wright Co.
J. H. Loughman, New York City; Pennsylvania Cement Co.
R. W. Marshall, Wheeling, W. Va.; Wheeling Wall Plaster Co.
H. A. McDonald, Buffalo, N. Y.; J. B. King & Co. Co.
E. N. Croll, Buffalo, N. Y.; M. A.Reeb.
W. A. Hilton, Akron, Ohio; The Robison Clay Product Co.
W. O. Holst, Toledo, Ohio; Ohio Builders' Supply Co.
H. F. Rowse, Akron, Ohio; Robison Clay Products Co.
A. Robinson, Uhrichsville, Ohio; Robinson Graves Sewer Pipe Co.
J. W. Laudrum, Terre Haute, Ind.; Terre Haute Coal and Lime Co.
W. T. Akers, Akron, Ohio; Akron Supply Co
Mrs. C. H. Classen, Baltimore, Md.
Mrs. W. T. Bradley, Philadelphia, Pa.
Mrs. D. J. Kennedy, Pittsburg, Pa.
Henry Angel, Cleveland, Ohio; Kelley Island Lime & Trans. Co.
J. N. Thayer, Erie, Pa.; O. C. Thayer & Son.
H. A. Fisk, Elmira, N. Y.; H. A. Fisk & Co.
Lawrence Hitchcock, Cleveland, Ohio; Kelley Island Lime & Trans. Co.
J. M. Horner, Braddock, Pa.; McCrady Bros. Co.
Kent E. Lyman, Jamestown, Pa.; Jamestown Paint and Varnish Co.
C. C. Lapham, New York, N. Y.; N. Lapham Co.
Frank A. Keith, Buffalo, N. Y.; U. S. Gypsum Co.
Walter McCammon, Cincinnati, Ohio; L. H. McCammon Bros.
Mrs. Harry P. Boyd, Baltimore, Md.
L. G. Powell, Toledo, Ohio; The Fishack Co.
W. H. Bergin, Uhrichsville, Ohio; Robinson Graves Sewer Pipe Co.
C. L. Graves, Uhrichsville, Ohio; Robinson Graves Sewer Pipe Co.
W. B. Stratton, Toronto, Ohio; Ohio River Sewer Pipe Co.
C. F. Knowlton, Cleveland, Ohio; Cleveland, Akron Bag Co.
A. W. Magnes, Cleveland, Ohio; Cleveland, Akron Bag Co.
W. R. Beach, New York, N. Y.; Consolidated Rosendale Cement Co.
Frank E. Boyd, Erie, Pa.; Boyd & James.
H. Houghton, Detroit, Mich.; H. Houghton.
T. M. Dyer, Buffalo, N. Y.; Alpha Portland Cement Co.
James N. Davis, Boston, Mass.; J. N. Davis Co.
James G. Lincoln, Boston, Mass.; Waldo Bros.
C. E. Moellering, Ft. Wayne, Ind.; N. Moellering's Sons.
Theo. C. Schwier, Ft. Wayne, Ind.; E. M. Baltes & Co.
L. E. Fishack, Toledo, Ohio; The Fishack Plaster Co.
W. O. Kutsche, Holland, Mich.; Holland Brick Co.
E. E. Evans, Bay City, Mich.; Boutell Bros. Co.
A. W. Calkins, Detroit, Mich.; C. H. Little Co.
F. C. Lauer, Rochester, N. Y.; Rochester Lime Co.
S. Dana Lincoln, Washington, D. C.; National Mortar Co.
F. M. Hoover, Philadelphia, Pa.; Northampton Portland Cement Co.
Chas. Warner, Wilmington, Del.; Chas. Warner Co.
B. F. Affleck, Chicago, Ill.; Illinois Steel Co.
A. W. Croft, Battle Creek, Mich.; Rathburn & Croft
F. C. Bogk, Milwaukee, Wis.; Ricketson Mineral Paint Co.
Edward Bogk, Milwaukee, Wis.; Ricketson Mineral Paint Co.
J. M. Woodruff, Chicago, Ill.; Chicago Portland Cement Co.
E. M. Baltes, Ft. Wayne, Ind.; E. M. Baltes & Co.
Palmer Cummings, Akron, N. Y.; Cummings Cement Co.
C. P. Flatley, Green Bay, Wis.; Flatley Bros. Co.
James Leenhouts, Grand Rapids, Mich.; Grand Rapids Plaster Co.
A. H. Apted, Grand Rapids, Mich.; Grand Rapids Plaster Co.
Charles A. Matcham, Allentown, Pa.; Lehigh Portland Cement Co.
George G. Sykes, Allentown, Pa.; Lehigh Portland Cement Co.
S. A. Morman, Grand Rapids, Mich.; S. A. Morman Co.
J. E. Coon, Utica, N. Y.; American Hard Wall Plaster Co.
E. L. Merriman, Scranton, Pa.; Paragon Plaster & Supply Co.
F. L. Lane, Buffalo, N. Y.; Buffalo Paragon Wall Plaster Co.
W. S. Pilling, Philadelphia, Pa.; Edison Portland Cement Co.
G. B. Nutt, Pittsburg, Pa.; Edison Portland Cement Co.
L. F. Kwiatkowski, New York; H. Huennekes Co.
Ralph Peverly, New York; Commercial Wood & Cement Co.
August Gross, New York; Gross & Horn.
Joseph Mandery, Rochester, N. Y.; Joseph Mandery.
Mrs. Charles O. Calkins, Buffalo, N. Y.
Mrs. J. H. Ross, Buffalo, N. Y.
C. M. Camm, Philadelphia, Pa.; Leslie & Trinkle Co.
Mrs. M. A. Reeb, Buffalo, N. Y.
Miss Laura Reeb, Buffalo, N. Y.
Miss Stella Reeb, Buffalo, N. Y.
L. V. Clark, Philadelphia, Pa.; Lawrence Cement Co.
C. R. Hope, Cleveland, Ohio; Ohio Architect & Builder.
Edward Puzey, Buffalo, N. Y.; Union Akron Cement Co.
W. C. Newman, Buffalo, N. Y.; Union Akron Cement Co.
George H. Wooley, Buffalo, N. Y.; Iroquois Hotel Co.
Fred G. Langner, Buffalo, N. Y.; Empire Forge & Iron Co.
B. F. Stradley, Philadelphia, Pa.; Vulcanite Portland Cement Co.
Albert Moyer, New York City; Vulcanite Portland Cement Co.
W. R. McMoen, Buffalo, N. Y.
A. I. Holloway, Buffalo, N. Y.; Empire Limestone Co.
Charles D. Swan, Buffalo, N. Y.; Bureau Buildings, Dept. Public Works.
Jesse Tarbox Beals, Buffalo, N. Y.; Buffalo Courier Photographer.
C. S. Crook, Youngstown, Ohio; Bessemer Lime Stone Co.
E. H. Fishack, Port Clinton, Ohio; Consumers' Gypsum Co.
Charles Sharp, Youngstown, Ohio; Charles Sharp.
C. H. Wood, Chicago, Ill.; Wolverine Portland Cement Co.
A. H. Lauman, Pittsburg, Pa.; Ohio Lime Co.
D. E. Binns, Uhrichsville, Ohio; Retarder Mfg. Co.
W. F. Vernon, New York; Coplay Cement Mfg. Co.
H. E. Dingley, Syracuse, N. Y.; National Wall Plaster Co. of America.
C. M. Tumar, Buffalo, N. Y.; Am. P. Co.
J. M. Carter, Buffalo, N. Y.; Secretary Buffalo Builders' Exchange.
G. M. Springer, Buffalo, N. Y.; Queen City Brick Co.
J. B. Arbour, Marietta, Ohio; Marietta Plaster and Fuel Co.

OBSERVED IN PASSING.

Messrs. Little, Kling and Wright attended the theater on Monday night.

G. H. Gengnagel always rises to the occasion, even when Richard Kind wishes to introduce him.

Mr. James H. Ross, of the local committee, knows just how to please the boys when he is out on a trip with them.

Harry P. Boyd is a good fellow to tell you jokes about some one else, but never tells the good ones that happen on himself.

Chas. F. O'Donnell finally got his courage screwed up to the sticking point and made a brief speech during the cement section of the convention. They say it was brief and very much to the point.

Richard Kind looks very well under a man's hat. It adds dignity to his bearing, but he is always the same Dick whether he is under a silk or felt covering. It is not what you put on a man's head that makes him, but what is in his heart.

J. O. Freeman, of the American Sewer Pipe Co., of Pittsburg, Pa., was on hand with a reminder that the American Sewer Pipe Co. had nothing slow about them, and each one present was presented with a handsome deck of cards in a fine leather case.

They say that Chas. C. Calkins was the lady's man, and Jesse H. Hawes was the dude of the party. Now we think this is hardly fair to the rest of the boys. Jesse, however, had champions on the car who were kind enough to say that they oughtn't to do that because those vests only cost seventy-five cents a piece.

The photographer of the occasion seemed to have gotten a line on the sewer pipe crowd very early in the game. It only required a very few words to put the crowd next to this fact. When she expressed a desire to have a picture taken she said, "I want all you sewer fellows to wait a minute." Every one seemed to enjoy the joke.

There was quite a little rivalry between steam and electrical transportation on the trip to Niagara Falls Wednesday afternoon. I guess the steam cars won out, although those of us who took the steam cars went through a wreck and took a cross lot trip to the street car line and still beat the other crowd in. It was such a jolly lot of fellows, and they were all having such a good time, that no amount of discouragement could have made them look down in their noses.

C. S. Bigsby, as usual, was on hand.

S. G. Webb, of Columbus, Ohio, was a new face at the convention.

George B. Christian, Jr., got a deck of cards but it cost him $1.65 to do it.

Lawson Moores is a good story teller when he gets warmed up to the occasion.

F. C. Lauer, of Rochester, N. Y., says that he has not had any new measures made lately.

R. S. Rhodes was there as big as life, and all we need add is that he is the same old Stanley.

C. P. Flatley, of Green Bay, Wis., had some nice pictures of concrete block buildings on hand.

The two Bergers, Eichelberger and Adelberger, of Dayton, Ohio, seemed to be pretty good chums.

Mr. W. G. Hurlbert, of Niles, Ohio, succeeded in convincing some of the people that he had a pretty good metal lathe for sale.

Messrs. Houghton and Holst had their heads together on the street car and I suppose there will be something doing soon.

The Duquesne Fireproofing Co., 421 Wood Street, Pittsburg, Pa., was represented by George H. Albertson and E. L. Devore.

J. H. Loughman, of New York, was on hand as usual giving everybody a friendly grip. It seems as though Joe knows everybody.

Little Henry Angel was on hand and on several occasions entertained a select group by singing his favorite song, "Sweet Bye and Bye."

E. B. Stanley, of Clinton, N. Y., made his first appearance at one of these conventions, and there are many who will not forget that he was there.

Walter McCammon, of Cincinnati, Ohio, succeeded in making us think that he was a pretty good fellow by saying ROCK PRODUCTS was a hummer.

Chas. Schmutz is getting into politics we understand. I suppose the next thing we will hear will be that Briar Hill cement is going into municipal work.

Ralph Peverly expected that Joe Degnan would be there, and in anticipation of a repetition of his troubles of last year came supplied with three or four hats.

L. G. Powell, of Toledo, Ohio, says you can not lose him very long, even if he does not get down on to Niagara river until the rest of the party are ready to start back.

Chas. L. Johnson says you can not keep him away from the builders' Supply Convention or a cement meeting, if you offer to pay him twice his salary to stay at home.

James Leenhouts was "Johnny on the Spot" with a nice celluloid pocket rule, which calls your attention to the Grand Rapids Plaster Co. every time you have occasion to use it.

Mr. L. V. Clark, of Philadelphia, Pa., should be a more frequent attendant at the convention, so that so many of the people would not have to ask, "Who is that handsome blonde?"

S. Dana Lincoln, of Washington, D. C., was mistaken by several people for Chas. M. Crook, of Youngstown, Ohio. We presume both of these gentlemen will be flattered by this.

All will remember Elihu Harpham of the Buckeye & Summit Sewer Pipe Co. every time they see that handsome souvenir which this company handed out. A gold mounted fountain pen.

If you miss any of your souvenirs when you get home just write Chas. M. Camm, care Lesley & Trinkle Co., 22 South 15th Street, Philadelphia, Pa., and ask him what he knows about them.

W. S. Griswold, of Cleveland, Ohio, seemed to be in demand by so many people that ROCK PRODUCTS was kept busy introducing these people to him. A whole lot of people wanted to get acquainted with W. W. Coney, also.

There were several other firms present at the convention. Among them the National Mortar Co., Washington, D. C.; Sandusky Portland Cement Co., Sandusky, Ohio; Norris & Christian Stone and Lime Co., Marion, Ohio.

The Robinson-Graves Sewer Pipe Co., of Uhrichsville, Ohio, was well represented. All three of the officers of the company were there, W. H. Bergin, president; A. Robinson, general manager, and C. L. Graves, secretary-treasurer, and proved themselves real good fellows.

E. S. Walton, of the Youngstown (Ohio) Ice Co., left Niagara Falls with his pockets full of icicles which he says he is going to put in cold storage to sell to his patrons next summer. They also say that Walton is a champion sprinter, especially when there is a car waiting for a trip to Niagara Falls.

W. T. Akres of the Akron Supply Co., Akron, Ohio, was distributing a nice souvenir in the form of a pocket-book as long as they lasted. The meeting was much larger than most of those there contemplated, and the supply of souvenirs was short in most every case, so that if every person did not receive one he should not feel that there was any discrimination.

George T. Whitmore—"smoke pipe"—of the Granite Clay Co., Akron, Ohio, was the most popular man in the hotel for the big part of one day, that is, until the supply of those handsome pipes that he was distributing, ran out. George is always popular any how, because he always has a smile for every one, but you are sure to have lots of friends when you have something to offer for nothing.

W. A. Hilton and H. F. Rouse, of the Robinson Clay Product Co., Akron, Ohio, were on hand, and very much in evidence with nice souvenir decks of cards in celluloid cases. Rouse says he has sworn

CEMENT MANUFACTURERS ASSOCIATION OF PORTLAND
NATIONAL QUARRY DRIVERS ASSOCIATION
NATIONAL LIME MANUFACTURERS ASSOCIATION
NATIONAL PLASTER MANUFACTURERS ASSOCIATION
NATIONAL BUILDERS SUPPLY ASSOCIATION
NATIONAL CUT STONE ASSOCIATION
CENTRAL PORTLAND CEMENT MANUFACTURERS

There is room for a few more Good Associations to get in and if you want to know how, just write this office.

off from slot machines because of a little complimentary notice he received in ROCK PRODUCTS after the last meeting, but when a man goes to passing decks of cards around, we are afraid he has gone from bad to worse.

Charles S. Matcham, who prepared an interesting paper on Portland cement for the Builders' Supply meeting, is one of the best known cement men in the famous Lehigh district. Mr. Matcham was born in England and came to this country in 1881, where he followed electric engineering until 1890. At that time he became interested in the cement question, and went into the manufacture of this product with his brother-in-law, Thomas D. Whitaker, under the firm name of the Whitaker Cement Co., with works at West Phillipsburg, N. J. In 1893 the company sold its holdings to the Alpha Portland Cement Co., but Mr. Matcham remained with the new company as general superintendent until 1897. In 1897 Mr. Matcham sold out his interest in the Alpha Portland Cement Co. and joined forces with Colonel H. C. Trexler, and they organized the Lehigh Portland Cement Co., at Allentown, Pa., and Mr. Matcham has been the active manager of this concern ever since. Their enterprise was successful from the start, and it has continued to grow year after year, until to-day they have six modern plants with a capacity of mnufacturing four million barrels of Portland cement a year. There are three plants at Ormrod, Lehigh County, Pa., one at Coplay, Pa., one at Mitchell, Ind., and one at Wellston, Ohio. With his extensive experience and the notable results of his work in the cement field, he talks cement with the full authority of a man with knowledge, not only well established, but thoroughly recognized by the trade at large. The main office of the Lehigh Portland Cement Co. is located at Allentown, Pa., and the officers are: Harry C. Trexler, president; George Ormrod, vice president; George G. Sykes, secretary; E. M. Young, treasurer, and Chas. A. Matcham, manager.

PLASTER MEETING.

The Plaster Association had the best meeting yet at Buffalo, N. Y., February 4.

The National Plaster Manufacturers' Association was called to order early in the forenoon of the 4th with an attendance of about thirty. Two very interesting sessions were held and this is probably the best meeting in the history of the association. A large number of new members were added. After a short time devoted to such matters as the election of officers, the appointment of committees and discussion of ways and means the forenoon session adjourned.

The afternoon session was devoted to several addreses and sort of experience meeting. Following these an address by Mr. L. G. Powell was characteristic of the man, and all those who heard last year's address by Mr. Powell and failed to hear this one, can readily appreciate what they missed.

A paper by Mr. C. C. Calkins on the bag question was heartily appreciated by all and many valuable suggestions were drawn from the statements made by Mr. Calkins.

Mr. W. S. Griswold's paper on Wood Fibre contained much valuable information to those not familiar with this class of plaster.

Time and space will not permit even an abstract of these papers at this time.

OFFICERS ELECTED.

Re-elected President H. E. Dingley, Syracuse, N. Y.; treasurer, Alexander Forrester, Cleveland, Ohio; secretary, E. H. Defebaugh, Louisville, Ky.; vice presidents, James Leenhouts, Grand Rapids, Mich.; John Elsessor, Braddock, Pa., and J. M. Black, Fairmont, W. Va. Directors, C. C. Calkins, Buffalo, N. Y., H. Houghton, Detroit, Mich.; R. W. Marshall, Wheeling, W. Va.; W. S. Griswold, Cleveland, Ohio, and E. H. Fishack, Toledo, Ohio.

THE ATTENDANCE.

The following members were present:

CANADA—J. W. Auld, Manager Imperial Plaster Co., Toronto.

KENTUCKY—E. H Defebaugh, Louisville.

MICHIGAN—H. Houghton, Detroit; James Leenhouts, Grand Rapids; C. H. Little, Detroit.

NEW YORK—Charles Root, Secretary Caledonia Marl and Lime Co., Caledonia; James H. Ross, Buffalo; W. K. Squier, Syracuse; C. C. Calkins, Buffalo; Frank A. Keith, Buffalo; J. E. Coon, Utica; F. L. Lane, Buffalo; Joseph Mandary, Rochester; H. E. Dingley, Syracuse; C. M. Tumar, Buffalo.

OHIO—J. B. Arbour, of the Marietta Plaster and Fuel Co., Marietta; Chas. Sharp, Youngstown; N. J. Ruggles, Rock Wall Plaster Co., Columbus; Wm. W. Huffman, Lorain; W. S. Griswold; W. O. Holst, Toledo; L. G. Powell, Toledo; E. H. Fishack, Port Clinton; D. E. Binns, Uhrichsville.

PENNSYLVANIA—John Elsessor, Crown Wall Plaster Co., Braddock; Chas. Towne, New Castle Elastic Pulp Plaster Co., New Castle; Frank E. Boyd, Erie; E. L. Merriman, Scranton.

WEST VIRGINIA—J. M. Black, Fairmont Wall Plaster Co., Fairmont; R W. Marshall, Wheeling.

A full report of this meeting will appear in ROCK PRODUCTS for March.

Have Made Some Additions.

Consolidated Wheatland Plaster Co., Caledonia, N. Y.—We have recently erected a 40x40 addition to our upper mill. In this building we have installed two of the latest style calcining kettles manufactured by Butterworth & Lowe, Grand Rapids, Mich., and also installed additional grinding machinery, erected new boiler house, and set new engine. In fact, will be equipped to turn out 100 tons of calcined plaster per twenty-four hours, commencing about April 1. We have two mills in operation now, grinding land plaster night and day. We are always in a position to furnish large quantities of land plaster on short notice. During the past season we shipped about 15,000 tons of land plaster and about 2,000 tons of building sand.

Production of Gypsum in the United States in 1902, by States.

State or Territory.	Total quantity.	Sold crude.		Ground into Land Plaster.		Calcined into Wall Plaster and Plaster of Paris.			Total Value.
		Quantity.	Value.	Quantily.	Value.	Before calcining.	After calcining.	Value.	
	Short tons.	*Short tons.*		*Short tons.*		*Short tons.*	*Short tons.*		
California, Ohio and Virginia	101,545	2,360	$6,790	16,357	$35,450	82,828	66,263	$248,153	$290,393
Colorado and Wyoming	16,051	.....	.....	.....	.....	16,051	12,841	73,372	73,372
Iowa, Kansas and Texas	295,769	957	1,180	4,331	6,497	290,481	232,385	799,678	807,355
Michigan	240,227	68,885	70,460	13,022	16,340	158,320	126,656	372,821	459,621
New York	110,364	9,153	15,184	25,981	43,750	75,230	60,184	200,236	259,170
Oklahoma	34,156	.....	.....	.....	.....	34,156	27,325	111,215	111,215
Other States	18,366	100	300	1,100	4,200	17,166	13,733	83,715	88,215
Total	816,478	81,455	93,914	60,791	106,237	674,232	539,387	1,889,190	2,089,341

Gypsum Productions in 1902.

We have received from the United States Geological Survey a complete report of the gypsum productions in 1902, compiled by George I. Adams. The total production for the year, value and average price per ton, is given as follows:

PRODUCTION OF GYPSUM IN UNITED STATES, 1902.

Grade	Quantity.	Value.	Average price per ton.
Crude	81,455	$93,914.00	$1.15
Land Plaster	60,791	106,237.00	1.75
Wall plaster	188,702	562,928.00	2.98
Plaster of Paris	350,685	1,326,262.00	3.78
	816,478	2,089,341.00	.....

This report points out that there has been a considerable advance in the gypsum industry the last few years, mainly due to the use of gypsum wall plaster in modern building. The production of land plaster is confined to the Eastern States principally, and a few localities in the West.

The amount of gypsum calcined into plaster of Paris now approximates 82 per cent. of the total output.

The report also gives a summary of the world's production of gypsum, which shows that the United States is the second country in this line. France is the greatest producer, turning out .....of the entire world, while the United States 19 per cent., Canada 9 per cent., Great Britain 5 per cent. and Germany less than 2 per cent.

The total production of the United States in 1901 was 633,791 tons, valued at $1,506,641.00, which, when compared with the total production for 1902, shows a very healthy growth, and when the figures for 1903 are available we will likely see even a bigger growth in addition than was shown in 1902 over 1901. The review by States is quoted herewith:

The New Gypsum Plant at Fort Dodge.

The new gypsum plant of the Plymouth Gypsum Co., at Fort Dodge, Iowa, is now nearing completion, and it is expected that by the first of March it will be ready to turn out calcined gypsum at a great rate. The work of erecting this plant was begun last fall and has been pushed rapidly; in fact, it is said that they have beaten all building records in this line. They have also sought to beat records both as to capacity and modern machinery, and reports at hand indicate that they have spared neither money nor brains to get the best to be had in the way of equipment.

The main building of the plant is 210 by 72 feet, 45 feet high. Three 10-ft. kettles are being installed at the present time, which the dryer are calculated to give a capacity of 300 tons of calcined gypsum a day, and it is the intention to add a fourth kettle at an early date.

The company has a vein of gypsum rock which is listed as running from 20 to 28 feet thick, reached by a mine shaft 80 feet deep.

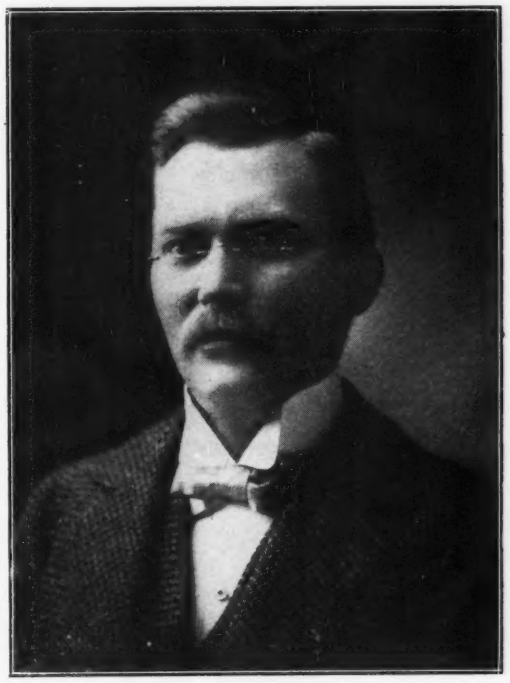
The officers of the Plymouth Gypsum Co. are: L. E. Armstrong, president and general manager; M. D. O'Connell, vice president; J. T. Cheney, secretary and treasurer. Mr. Armstrong will be assisted in his management by D. E. Roberts and F. H. Van Osdoll, and in the manufacture by Messrs. C. L. Peterson and David Brown, two expert mill and stucco workers.

Traveling representatives of the new mill will start out for spring orders February 1.

Still More About Elastic Pulp Plaster.

In accordance with the statement made in last issue there was probably others who held patents bearing on the use of fibre which antedated 1897. We are informed that the Napoleon Pulp Plaster Co., of Napoleon, Ohio, own patents dating as far pack as 1895.

The question as to the right of the various firms to manufacture the various forms of fibre plasters is a matter for the courts to settle and not a matter for trade paper discussion.



L. E. ARMSTRONG.

We are, however, glad to publish tests made by men of recognized authority, which show the various good or bad qualities of any material used in building construction.

We take the following from a pamphlet issued by the New York and New England Pulp Plaster Corporation:

Results of Fire-Proof Tests on Elastic Pulp Plaster.

Made by Henry Souther, State Chemist for Connecticut, March 18, 1903, Hartford, Conn.

On a suitable wooden frame I nailed a piece of the wire lathing submitted with the plaster and then made a paste of about the same consistency used by plasterers so that was a good clinch on the wire lath.

This was molded March 7, having a thickness of about an inch. In a day or two it was firmly set, being not extremely hard like cement but quite hard and very tough.

On March 16, a period of nine days, I placed this frame on top of my assay muffle where it is possible to get and maintain for a long time a very high temperature. I heated this plaster from 9 a. m. until 2 p. m., continuously, and the temperature measured by my pyrometer of approximately 2,500 degrees Fahrenheit. The temperature on the outside of the plaster was quite low. It did not become red at any time to the eye and the hand could be almost held on to the clinches without burning.

At the end of the period of heating, the cement showed that it had shrunk somewhat and was full of fine hair lines to about one-half its depth. There was no breaking or serious deterioration of the plaster.

I consider this a very satisfactory result.

Information Bureau

A Few of the Direct Inquiries Made to the Office of Rock Products During Last Month.

743.—We are in the market for a crusher that will reduce sand rock to sand.

744.—Where can I buy the best lime kiln, and where can I see one in operation near Alpena, Mich.?

745.—We want the addresses of manufacturers who make the most modern dirt loaders, to be used in stripping quarry.

746.—We would like to communicate with manufacturers of retorts for burning limestone, that is, if the same can be burned in a retort.

747.—We want the names of granite, interior marble and limestone manufacturers near Athens, Georgia.

748.—I would like to correspond with parties who equip plants to manufacture sand-brick.

749.—We want steel blades for marble and stone.

750.—We want smoke stacks.

751.—We are in the market for marble channeling machinery.

752.—We want elevating and conveying machinery—20-ton traveler.

753.—We want quarry channeling machinery.

754.—We need rock crushers.

755.—We are in need of shot for polishing stone.

756.—We want air compressors.

757.—We are in the market for 10 h. p. electric motor machinery.

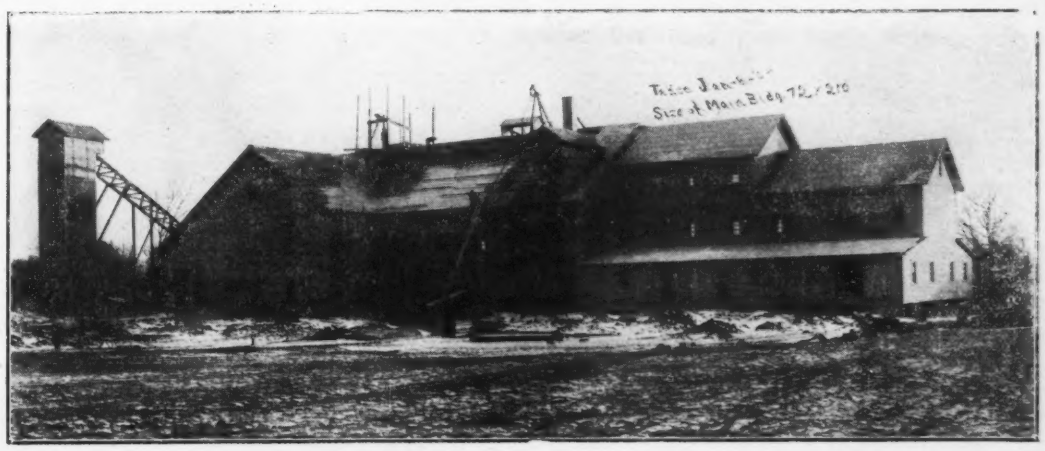
758.—We want polishing machinery.

759.—Where can we get granalite?

760.—We are in the market for dark blue Richmond granite.

761.—We would like the addresses of manufacturers of concrete articles by hand.

762. We would like the addresses of any firms that manufacture or sell a red sand made from a red sandstone in Ohio.



PLANT OF THE PLYMOUTH GYPSUM CO., FORT DODGE, IOWA.

Wanted and For Sale

One insertion, 25c a line; Two insertions, 50c a line; Three consecutive insertions with no change in the composition, 56c a line. Count eight words to a line; add two lines for a head.

WANTED—HELP.

SALESMEN—We want good salesmen all over the South for the Winget building block machine. Address A. D. MACKAY & CO., Chamber of Commerce, Chicago, Ill.

AGENTS—Fifty men to act as agents; must understand cement; concrete and construction of buildings. Address FLOYD PALMER, Vice President Harmon S. Palmer Hollow Concrete Building Block Co., 1450 Binney Street, Washington, D. C.

WANTED—MISCELLANEOUS.

A PLANT—To screen sand. Address W. J. BRADFORD, 219 South Sixth Street, Fulton, N. Y.

THE ADDRESSES OF PARTIES who have been illegally intimidated or restrained from the manufacture and use of HOLLOW CONCRETE BUILDING BLOCKS, or where a SINGLE lien has been filed on any building erected therewith *by any* inventor, patentee or manufacturer under any so-called "basic patents." Address NOYES F. PALMER MFG. CO., Brooklyn (E), N. Y., Manufacturer of Hollow Building Block Machinery.

WE WANT THE NAME of every party selling, buying or using any hollow concrete building block machines, as well as the location of every building erected with hollow concrete blocks, without our license, and for first information we will pay a reward. Address the Law Department of THE HARMON S. PALMER COMPANY, 1450 Binney Street, Washington, D. C., Owners of Basic Patents.

INFORMATION—Is your sand suitable for sand-brick manufacture? Let us test it and make you sample brick. Address JACKSON SAND BRICK CO., Jackson, Mich.

CORRESPONDENCE—With parties who desire to engage in the stone business, either by purchase or lease, of our quarries which are fully equipped, centrally located and especially adapted to furnishing machine-broken stone. Address LE GRAND QUARRY CO., Marshalltown, Iowa.

BUSINESS OPPORTUNITIES.

I WANT to interest parties in wide ridge of white clay and red sand near here; crossed by railroad; will sell or trade. Address IKE A. CHASE, Memphis, Tenn.

FOR LEASE.

MARBLE WORKS AND QUARRIES in Southern California; property of California Portland Cement Co., rooms 401-403 Trust Bldg., Los Angeles, Cal. Works have been running day and night for two years, furnishing marble for two of the finest office buildings in San Francisco, Cal. The present lessees constructed and own these buildings, costing over $1,500,000.00. The buildings are nearly completed and a favorable lease will be made for the marble works and quarries with the right parties. The quality of the marble is established and there is no other plant of this kind in Southern California or the Southwest. Any marble manufacturer could supply the entire territory from this factory; correspondence solicited.

FOR SALE—PLANT.

LET US SELL that plant for you. See head of department for rates.

CEDAR GROVE MARBLE QUARRIES near Philadelphia; stone suitable for sawing, fluxing and manufacture of building and land lime. Address WM. W. POTTS, Swedeland, Pa.

BLUE STONE—Our entire plant, equipment, quarries, etc., for sale at a low figure; well located, good equipment, well established trade; quarries especially adapted to the production of large platforms and heavy rock; special car for transportation of large platforms; satisfactory reasons for selling. Address F. G. CLARKE BLUE STONE CO., Oxford, N. Y.

COMPLETE STONE CRUSHING PLANT.—Everything, from an elbow up to a No. 3 Gates' crusher. Address E. T. BOTKIN, Farmland, Ind.

LIME KILN.—110 barrels daily capacity, with 75 acres of land on L. & N. railroad in Eastern Kentucky; price cheap and terms reasonable. Address NEWALA LIME WORKS, Ganadarque, Alabama.

FOR SALE—MISCELLANEOUS.

HALF INTEREST IN QUARRY.—A half interest in the Burke Stone Quarry, near Hot Springs, S. D. A good-paying and well-advertised business; output past season, 425 cars; over 500 cars already contracted for 1904; business has doubled each year for the past four years; partner familiar with masonry work preferred, as present owner, owing to other duties, desires to relinquish the management. Plant consists of 280 acres of ground with no stripping. Saw plant, derricks, hoisting engines, etc. Present owner is unable, owing to other business, to give proper attention to the business. Address BURKE STONE CO., Deadwood, S. D.

FOR SALE—MACHINERY.

SEVERAL second-hand Pulsometer pumps, boilers, engines and miscellaneous machinery. Address MASLINS, 165 First Street, Jersey City, N. J.

VICTOR STEAM SHOVEL—Yard and one-half dipper; 45 h. p. boiler; shovel has been used but seven months. As we have no use for steam shovel, will sell cheap. Address VICTOR, care ROCK PRODUCTS.

N. LAPHAM CO.,

Rooms 1529, 1530, 1531 and 1532, 150 Nassau St., NEW YORK, N. Y.

SLACK COOPERAGE STOCK.

CEMENT AND LIME STOCK

A SPECIALTY.

MILLS: New York, Ohio, Kentucky, Virginia, Pennsylvania, Michigan, Tennessee and North Carolina.

Duquesne Fireproofing Co.

GEO. H. ALBERTSON, GEN. M'G'R.

421 WOOD ST
PITTSBURGH PA.

Tell 'em you saw it in ROCK PRODUCTS.

ROCK PRODUCTS

SUPPLEMENT—4 PAGES

Vol. II. Louisville, Ky., February, 1904. No. 11.

Eighteenth Annual Meeting of the Brick Association.

THE MOST NOTABLE GATHERING IN THE HISTORY OF THE CLAY INDUSTRY WAS HELD AT CINCINNATI, OHIO, FEBRUARY 1 TO 6, 1904.

The Grand Hotel was the headquarters and its immense lobby was overflowing with brick men and machinery men and their families all week, the attendance including ladies, being something over 350.

MEETING OF THE CERAMIC SOCIETY.

The American Ceramic Society held its session Monday, February 1, which was the regular business session of this society and was given over to the regular routine business. Then, beginning Monday afternoon, the following program was substantially carried out:

The Influence of Magnesia on Clay—By Lawrence E. Barringer, E. M., Research Laboratory, General Electric Co., Schenectady, N. Y.

Seger Cones and Their Fusing Point Expressed in Degrees—By Samuel Geijsbeek, Winkle Terra Cotta Co., St. Louis, Mo.

Faience vs. Majolica—By Stanley G. Burt, Rookwood Pottery Co., Cincinnati, Ohio.

TUESDAY MORNING, FEBRUARY 2, 1904.

Call to Order at 9 a. m.

Note on the Tensile Strength of Raw Clays—By Dr. Heinrich Ries, Cornell University, Ithaca, N. Y.

The Conductivity of Refractory Material—By H. A. Wheeler, E. M., St. Louis, Mo.

The Coloid Theory of the Plasticity of Clays—By Dr. Allerton S. Cushman, Chemist, Road Material Laboratory, Washington, D. C.

Chrome Tin Pink—A Rejoinder—By Walter A. Hull, Reese-Hammond Fire Brick Co., Bolivar, Pa.

TUESDAY AFTERNOON, FEBRUARY 2, 1904.

Call to Order at 2 p. m.

The Refractoriness of the New Jersey Fire Bricks—By Dr. Heinrich Ries, Cornell University, Ithaca, N. Y.

Carbon in Clays, and its Effects—By Prof. Edward Orton, Jr., E. M., Ohio State University, Columbus, Ohio.

A Table of Oxygen Ratios for the Use of Ceramic Chemists—By Ross C. Purdy, Ohio State University, Columbus, Ohio.

A Proposed System of Ceramic Shorthand—By Edward C. Stover, Esq., Trenton Potteries Co., Trenton, N. J.

WEDNESDAY MORNING, FEBRUARY 3, 1904.

Call to Order at 9 a. m.

Stoneware Engobes and Stoneware Glazes—By Samuel Geijsbeek, The Winkle Terra Cotta Co., St. Louis, Mo.

Egyptianized Clay—By Edward C. Acheson, The Acheson Co., Niagara Falls, New York.

Notes on Portland Cement—By Albert V. Bleininger, B. Sc., Ohio State University, Columbus, Ohio.

A Bibliography of Clays (By Title)—By John C. Brauner, L. L. D., Leland Stanford Junior University, California.

Of course the papers and discussions were interesting, they always are, both interesting and thorough, and when the details of the transactions are published the members of this society will have some very valuable reading matter, and those that are not members and want to keep in touch with scientific progress in clay work should get in touch with the secretary of this society, Professor Edward Orton, Jr., of Columbus, Ohio, and arrange to become members, or at least get copies of the transaction.

One of the strong feature of this meeting was a paper by Dr. Allerton S. Cushman, of Washington, D. C., and he was being complimented and held up in the corridor for buttonhole talks all the next day.

Dr. Cushman presented the coloid theory of the plasticity of clays. His presentation showed not only a thorough knowledge of physical chemistry, but also the ability to apply the knowledge which we have to the solution of practical problems.

The reason for the plasticity of clays has been the subject of much discussion during the last ten years. The able way in which the paper was handled was the means of bringing many friends to the coloid theory.

Prof. Orton brought forth some new facts with reference to the behavior of carbon in clays, and presented a number of problems with reference to the effect of carbon in clays which should be worked out in the near future. Prior to this time the presence of carbon in clays has attracted almost no attention. Mention has been made, however, from England, of the fact that a qualitative determination showed that many clays contained carbon, and almost all of those which have come under the notice of Prof. Orton have contained varying amounts of carbon.

Prof. Orton determined the most desirable temperature for the removal of this carbon, which, of course, is necessary, and some of the ills and troubles of the brick man which have formerly been attributed to other causes should, no doubt, be laid to the door of carbon, or rather improper firing where carbon is present in the raw material.

Mr. A. V. Bleininger brought out some very interesting facts for the cement people on a number of phases. He has also discovered something which is entirely new and is entirely practical and not a theory. In his work he has discovered that the grinding of free lime with natural rock cement not only materially increases their strength but also adds very greatly to the stability of the ultimate product. This, of course, means that a pozulaine cement is formed and is similar to the slag cements but does not have the sulphides which are present in that product.

There were other very interesting features, too, but time and space will not permit a brief outline of all of them here.

THE BIG DAY.

The big day with the National Brick Manufacturers' Association was Wednesday, February 3, which was the day for the election of officers and for the annual banquet in the evening.

The meeting was called to order at 2:35 p. m. by President R. G. Isenhart, of Horseheads, N. Y., and was opened by prayer by Rev. Blodgett, of Cincinnati.

The president then introduced Mr. C. J. Hunt, of Cincinnati, who bid the brickmakers welcome in that good, old hospitable way, for which Cincinnati is famous, and his welcome to the delegates was added to by Mr. W. A. Eudaly and Mr. J. M. Blair.

Mr. Blair, who was the moving spirit of the local committee, the full committee being composed of J. M. Blair, George H. Burns, B. H. Busse, N. C. Powell, and William Mitchell, told the visitors that they not only meant to bid them welcome in words, but were arranging to show them about the city and furnish entertainment of various kinds for all. He said the ladies would be taken to visit the famous Rookwood pottery on Thursday, and an entertainment would be given at the Grand Hotel Thursday evening. Later there would be other entertainment features, including theater parties, etc.

Vice President G. H. Shellenberger replied to the welcome addresses and told the local delegation how happy they were all to meet again in the same city where the association was born eighteen years ago.

Taking up the regular order of business, President R. G. Isenhart delivered his annual address, stating in the beginning that it was a matter for congratulation to be able to meet with his association at the same time and place where it was organized eighteen years ago, and find many of the original members present. He had a kindly word of commendation for the old wheelhorses who had stood by the association through all the trials that an association is subjected to, and then grew reminiscent and discussed for a while the early efforts of the association. He pointed out that when it was first promoted there was an exposition on at Cincinnati, and the brick industry had not been considered important enough from a mechanical standpoint to provide space for an exhibition of brick making machinery. The matter was taken up at that time and through the influence of Mr. Eudaly and Mr. Blair, of Cincinnati, space was finally secured, and that marked the first and most prominent step of public recognition for the machinery of the clayworker.

He told of early predictions that the association would soon dwindle away, because the members would grow tired of paying their expenses to attend the meetings, predictions which, it is useless to say, failed to come true. It was found that from year to year the benefits derived from attending the association meetings were more and more, because by coming together and discussing methods of manufacture, the brick men had been able to gain information which repaid them ten fold for the expenses of attending the meeting. The benefits, however, were not confined to the interesting papers and technical talks alone, but the little side talks between man and man had been a great help in many ways. It has taken the bitterness out of competition, and in its place to-day there is a brotherly feeling, and while there has never been an official price, nor have price matters been taken up in any official way, still educational influence has enabled brick manufacturers to secure better profits in the business.

Before closing his address the president complimented Secretary Randall who has been a faithful servant of the National Brick Manufacturers' Association for eighteen years, and has worked incessantly throughout all that time for the general good of every man in the business.

Following this came the report of Treasurer Jno. W. Sibley, of Birmingham, Ala., the humorist of the association, as well as an excellent protector of the strong box, who made a happy little speech, and told about the healthy condition of the association's finances.

THE ELECTION OF OFFICERS.

The election of officers being the next in order on the program, Mr. W. M. Gates, of Chicago, Ill., secured the floor, and in a very eloquent speech nom-

inated Mr. W. S. Purington, of Galesburg, Ill., for president. This took the meeting so favorably that nominations were closed and the secretary instructed to cast the ballot in favor of Mr. Purington, and there was not a dissenting voice.

Mr. W. A. Eudaly then got the floor and said he wanted to put in nomination for first vice president the first man who ever made an address to the association, Mr. J. M. Blair, of Cincinnati, Ohio. He said he owned Mr. Blair a favor that he had been wanting to pay for eighteen years, because eighteen years before, immediately after making his first speech to the association, Mr. Blair had nominated him (Mr. Eudaly) as first chairman of the association.

After Mr. Blair had been elected first vice president, a member arose and said he would like to see the whole Blair family in office, and to help that along Mr W. P. Blair, of Terre Haute, Ind., was put in nomination and was promptly elected.

Mr. A. R. Root, of Princeton, N. J., was elected third vice president, and then Mr. Chas. A. Bloomfield, of Metuchen, N. Y., made a little talk about the eighteen years of faithful service by Secretary Randall and presented his name for re-election to the office of secretary. The name of Mr. Randall was enthusiastically cheered by the whole association, and he was elected with a hurrah.

Mr. J. W. Sibley, of Birmingham, Ala., was re-elected treasurer, and then the association affairs and responsibilities were turned over to the new officers.

President Purington was escorted to the chair and thanked the meeting for the honor conferred on him. He is one of the old wheelhorses of the association, as well as one of the most prominent brick men in the country, and has been a faithful attendant for fifteen years, missing only one meeting during that time, and that because the railroad failed to deliver him in time.

The other officers were installed in regular order, after which the meeting proceeded with the regular program, the first order of business being a paper entitled, "Our Record of Progress—Eighteen Conventions, by one Who has Attended Them all,' by D. V. Purington, Chicago, Ill.

Mr. Purington said he thought it would be a small and pleasant job to review the history of the association, but found when he got into it, that while it was a pleasant undertaking, the job was a big one, if he intended to cover properly the work done in the eighteen years in the association line.

One of the most important features during this time, he said, was the progress made in machinery, especially in machinery for the stiff-mud process. "Who," he said, "of the old guard do not remember the scorn of the Philadelphia members toward the stiff-mud process as advocated by the St. Louis delegation?" Then he went on to point out how, by the perseverance of the St. Louis brick men, who, eighteen years ago, stood alone as staunch advocates of the stiff-mud process, this process has gradually been brought into prominence. He also touched on the development of the paving brick industry, giving credit to Joseph Stafford, of Galesburg, Ill., as being the pioneer in the development of this industry.

At the close of the speech, Mr. Bloomfield said he thought one thing had been left out, and that was, he failed to mention the American Ceramic Society, which had been an outgrowth of the National Brick Manufacturers' Association, and had grown to be such a factor in the clay industry he thought some mention of it should have been included in this review. Mr. Purington acknowledged the omission and paid his compliments to that society.

The next paper on the program was, "What Machinery Men Have Done for Brickmakers," by Mr. J. H. Chambers, of Philadelphia, Pa.

This paper, too, took on something of the nature of a review of the industry, and then Mr. Chambers pointed out the situation as it exists to-day and the different classes of brick men that are met with, and that he thought it possible for all to work together and therein do more for each other.

This paper was followed by one on the other side of the question entitled, "What Brickmakers Have Done For the Machine Manufacturers," by Dr. A. L. Converse, of Springfield, Ill. Mr. Converse was not present himself, but his paper was read by Secretary Randall. He took up the matter in a humorous way and put the machinery men on the spit of jest and roasted them to a turn.

This was followed by considerable discussion of the brick business from the machinery man's standpoint, and the machinery man from the brickmaker's standpoint, after which the meeting adjourned for the day.

THE BANQUET.

The annual banquet of the National Brick Manufacturers' Association was held in the main dining room of the Grand Hotel, which was filled to overflowing, and the overflow filled the adjoining room. The banquet brought out the ladies and there was quite a sprinkling of them present, and it also brought out quite a sprinkling of dress suits, but the fellows that did not wear dress suits came, too. It was a great gathering of people and everybody seemed to be glad that they were there.

With the last course served the waiters passed around and delivered to each gentleman present three elegant cigars with the compliments of the Cincinnati brick manufacturers, and then Mr. W. A. Eudaly, who was the first president of the association, who was appropriately booked as the toastmaster for the night, opened the ball for the feast of reason and banter.

He made a nice little talk to those present, and then introduced Mr. W. B. Melish, of Cincinnati, to talk to us about "The World Power."

Mr. Melish said that when he first got orders to deliver an address on this subject he started to seek information in regard to the naval strength of this great country, and to load up on records and achievements, but he happened to bump into the secretary, who told him he was off his base, because the women were the power of the world. He told a funny little story then to illustrate his feelings in the matter, and then for fifteen minutes good naturedly joshed the ladies in attendance, but made good before he quit, by telling them how divine they were from man's standpoint, and then he assured them that no waman, however well off she might be, had ever tasted thoroughly of the sweetness of the world until she had loved, worried with and thoroughly spanked a child of her own.

The next speaker of the evening was Mr. W. H. Hunt, of Cleveland, Ohio, who discoursed on "The Other Fellow." We are always hearing of the other fellow in business, and he is made to bear more blame than any other creature on earth, this same other fellow usually being a competitor in business, but Mr. Hunt discoursed from the standpoint that the other fellow from the brickmaker's standpoint is the workman. He outlined existing conditions in the labor world to-day, and made a number of suggestions as to their solution, one of the features of which was illumination of the unions and the unscrupulous leader.

After this, W. D. Gates, of Chicago, Ill., proceeded to make some mud pies. Not from choice probably, but because the subject assigned to him was "Mud Pies." He started in to review the mud pie business from its earliest history and pointed out that according to his way of figuring it out the Creator Himself was first to dapple in mud pies, and one of his first products was when He took a lump of clay and made man. He gathered from the events of history that when man was created the maker looked him over and concluded He could do better next time, so He took some better clay and made woman. From this ancient start Mr. Gates brought the mud pie business on down to date, and what he said about it kept everybody laughing.

Mr. Gates did not get the whole evening to himself, however, for there were others on the program as follows: "The Open Door," by Vice Mayor H. L. Gordon Cincinnati; "Our Competitors," J. R. Copeland, Birmingham; "Fragments," W. W. Taylor, Cincinnati; "We of the Earth Earthy," Rev. C. W. Blodgett, Cincinnati.

Thursday morning the brick men got down to business again, continuing for the balance of the week an interesting program of technical and business papers.

NOTES OF THE BRICK MEETING.

Along the hallway extending from the main lobby of the Grand Hotel back alongside the meeting hall was a veritable machinery hall, and machinery and supply men were installed thick as booths at a country fair. Some were machines, some were circulars, and all had men in attendance to attend to the visitors and merits of their products. Some of the brick press men had models on the floor, and all of them had circulars and catalogues.

James B. Crowell & Son, Wallkill, N. Y., make brick molds, barrows, and other supplies were represented in machinery hall.

The Chisholm, Boyd & White Co., Chicago, Ill., had some sample briquettes, too and they were much prized by visitors who carried them away as souvenirs.

The Horton Manufacturing Co., Painesville, Ohio, distributed some elegant calendars as reminders that they are in the swim when it comes to brick machinery.

W. E. Crume, of Wm. E. Crume & Son, Dayton, Ohio, who are builders of sand-lime brick plants on the Komnick system, was on hand with some interesting samples and circular matter on the subject of sand-lime brick.

The Henry Martin Brick Machinery Co., Lancaster, Pa., had a liberal collection of catalogues and circulars, telling about their line of brick making machinery.

Mr. O. W. Dunlap, of the Dunlap Manufacturing Co., Bloomington, Ill., was distributing some aluminum match cases that were very neat reminders of their "perfect" clay screen.

Frederick W. Dennis, 145 Walton Street, Atlanta, Ga., who is a builder of brick kilns and dryers had sample plans on hand and took pleasure in showing those interested all about them.

The Standard Dry Kiln Co. had a table spread with circulars which told about the merits of the standard kiln and there was also a supply of neat memorandum books for the brickmakers.

The American Clay Working Machinery Co. had among their collection of catalogues, etc., novelties in the way of simple briquettes and also a neat pocket mirror. They were also distributing an elegant memorandum book.

The Cleveland Car Co., Cleveland, Ohio, had a nice exhibit there in the shape of brick cars, etc., in charge of Mr. W. B. Ellenberger, who was always glad to tell the brick men about the good qualities of the Cleveland car.

The Arnold-Creager Co., New London, Ohio, had a bill book that was a mysterious source of amusement to the visitors, and another novelty in the shape of a ruler for distribution among the visitors as a reminder that they make brick machinery, molds, etc.

R. C. Bennett, of the Wellington (Ohio) Machinery Co., had a roller-bearing truck wheel on exhibition which attracted its full share of attention. They also had an exhibition of sand dryers and Wellington molding machinery and other samples of their product.

Mr. H. S. Hopkins, secretary, John J. Moroney, manager, and Mr. Durbin, of the American Sand-Lime Brick Co., Chicago, Ill., were on hand with nice exhibits of sand-lime brick made by their system. Mr. Berg, inventor of the Berg press, which is made at Anderson (Ind.) Foundry and Machine Works, was also in attendance.

The National Roofing Co., Tonawanda, N. Y., had a nice exhibit and a striking sign calling attention to their asphalt gravel roofing that Mr. Thomas B. Lehon in charge, told the people all about it, and incidentally booked orders from those who were in need of a new roof for brick sheds or anything else they wanted a good covering for.

J. B. Kendall, of Kendall & Flick, Washington, D. C., was on hand with some samples of manganese in various shapes and forms, and samples of clay products in which manganese had been used to advantage, one of which was a piece of roofing tile, the color of which had been changed from a glaring red to a nice brown by manganese.

E. B. Foster, of the Main Belting Co., Chicago, Ill., had some samples of Leviathan belting and was on hand at all hours of the day to tell the brickmakers of the good points of these belts which is a great favorite among the clay and brick product industries. Those in attendance were known by him personally, so he was at home at all times.

The many friends of the Charles Warner Co., Wilmington, Del., will regret to hear of the sudden death of Mr. A. T. Warner, of that company. It occurred on January 15. He was a pioneer in the business and a man of sterling quality, and his demise is a loss to the community and to the industry.

The plant of the Jackson Pressed Brick Co., Jackson, Mich., was destroyed by fire Monday morning, February 1. This plant is a new one, of which Mr. J. E. Bartlett, is the principal owner, and they have lots of orders on hand for sand-lime brick, of which they were making about 20,000 a day. The loss is estimated at $30,000.00 to $40,000.00, with only a small insurance.

ILLINOIS CLAYWORKERS MEETING.

The Illinois Clay Workers' Association held its twenty-sixth annual convention at Danville, Ill., January 5 and 6. There were two days of interesting sessions, presided over by H. M. Heafer, of Bloomington, Ill.

The meeting opened with an address of welcome by S. W. Dixon, of Danvile, Ill., followed by the president's address.

Then came the reading and discussion of interesting papers. The first one being "Civic Improvements," by D. H. Jansen, Pekin, Ill.

This was followed by a paper from D. C. Haeger, of Dundee, Ill., in which he told of the troubles of "The Beginner" in the brick business.

"Necessary Sizes of Drain Tiles" were discussed in an interesting paper by L. R. Whitney, Terre Haute, Ind.

"The Competent Machinist For Clay Plants," was a paper by Mr. M. W. Blair, of Terre Haute, Ind.

H. A. Eaudaly, of Sheridan, Ind., had an interesting paper on "Causes and Prevention of Fires on Brick Yards."

F. S. Selley, Danville, Ill., discussed "Road Construction" in an interesting paper.

This was followed by an interesting paper by Mr. W. B. Corliss, Cayuga, Ind., on the "Pug Mill."

J. J. W. Billingsley, Indianapolis, Ind., presented an exhaustive paper on "Underdrainage, the Base of Best Soil Improvement."

"Waste Heat Drying" was the subject of a paper by S. W. Butterworth, of Danville, Ill.

"Power Generation For Brick Plants" was the subject of a paper by John T. Thompson, of Chicago, Ill.

"The Burner" was discussed by Warren W. Ittner, of Bellevelle, Ill.

Officers were elected for the ensuing year as follows: President, Frank W. Butterworth, Danville, Ill.; vice president, O. W. Dunlap, Bloomington, Ill.; secretary, George H. Hartwell, of the *Clay Record*, Chicago, Ill.; treasurer, William Hammerschmidt, Lombard, Ill.

Before the meeting closed, Dr. A. L. Converse, of Springfield, Ill., made a happy speech on behalf of the association and presented the retiring secretary, G. C. Stoll, of Bucyrus, Ohio, with a gold watch and charm as a mark of appreciation of his services. Mr. Stoll has been secretary of the association for fifteen years and is probably more thoroughly acquainted with every member of that body than any one man in the country, and in addition to the watch the committee on resolutions tendered in proper form grateful recognition of his past services with expressions and best wishes for his future success.

J. J. Callahan is equipping a crusher plant at Whitehall, N. Y.

The Carrington-Gonnella Stone Co. has been incorporated at Sanford, N. C., by R. E. Carrington, John Gonnella and J. W. McIntosh, of Sanford.

The E. B. Ellis Granite Co. has recently been formed at Rutland, Vt., and has purchased the granite property of E. B. Ellis and Goldwin Starrett.

The Inter Ocean Stone Co., Lemont, Ill., has been placed in the hands of a receiver. The receiver is Mr. D. S. Geer, who was formerly president of the company.

The West Conshohock (Pa.) Stone Co. has been incorporated with a capital stock of $5,000.00. The incorporators are: Matthias L. March, Ellsworth L. March and Irvin L. March.

The Independence Stone Co., Cleveland, Ohio, has been reorganized for the purpose of increasing its resources, and contemplates enlarging its works at South Park, Ohio. The offices of the company are now at 517 American Trust Building, Cleveland.

The Silverdale (Kas.) Stone Co. has a contract to furnish stone for the new high school building at Omaha, Neb., to start off the new year with, and is figuring on a number of other contracts. The company is opening up fresh ledges, improving its facilities so as to be in shape for the busy season.

The stockholders of the Egyptian Marble Co., Spokane, Wash., met recently and elected officers for the year as follows: T. E. E. Bartlett, president; J. Calton Smith, secretary. This company, which has a capital stock of $500,000.00 is developing property in Stevens County, and expects to put in quite a lot of machinery this year for marble working.

Salt.

Lend Us Your Ear.

We just want to say a few words to those interested in the manufacture and sale of salt. We say a few words on this subject now and then, and in the early issues of ROCK PRODUCTS we had a very complete story of the history and development of the salt industry. Lately we have been running a little shy on salt news, and have also been exceedingly crowded with news in other departments, and as a result, some of the salt men have been saying things to us. For example, here are two letters that came in in one mail:

"We very much regret to note you had nothing in your last two issues in regard to salt; we subscribed for the publication for the salt information there was in it; the first few numbers were very interesting to us, but when the salt items are left out there is nothing in it that is of interest to us; hoping you can continue to give us the salt information."

"Your last two issues of ROCK PRODUCTS have contained no salt information, whatever, and if you do not publish any salt news kindly cancel our subscription, as we are not at all interested in the other stuff contained therein."

We are ready to talk salt at all times, just as we are ready and anxious to thoroughly cover every branch of the trade represented by this paper, though we are sometimes hampered a little by lack of space for the great variety of products in the field. It is our ambition some day to make a big weekly paper out of ROCK PRODUCTS so there will be plenty of room to say and do all that could be expected for each branch of the industry represented. However, we must crawl before we walk, and while we feel we have passed the crawling stage and are now able to stand up and walk a little, we ask the cooperation of the salt industry just as we do that of all other industries in making its department in the paper all that it should be. We want every man in the salt trade to consider this paper as being as much his as anybody's and to take a personal interest and make free use of the salt department for the discussion of any and all subjects of interest to the trade. We want the news from each one of you, and we want to go further than that. Let us swap ideas on how to push salt and improve the salt business all along the line from the manufacturer to the final sale to the consumer.

There are several things in connection with the salt industry that need attention to-day. There is evidence that the manufacturer of salt needs to get better profit out of his product, and it looks like there is room for some associated effort in this line.

There are rumors from the West Coast that indicate a war in prices, and it is not so long since a combination effort over there got into trouble with the Federal laws, and the Eastern part of the country has had its troubles, too. Some, if not all of these troubles, could be wiped out with proper association efforts, and that without hurting the salt dealer either. It may seem like pie for the salt dealer to be able to buy salt at a price which means loss to the manufacturer, but it is not satisfactory in the end, for it is an unnatural condition that can't survive very long. What is the best for all concerned is for everybody to make a fair profit. from the manufacturer to the retail dealer, and this can be brought about if the trade will get together in the right spirit.

There are other things, too, that can be done to advantage by concerted effort. Just as concerted effort in the Portland cement industry will certainly increase the use of Portland cement, the salt manufacturers can push salt by concerted effort. They can start a campaign of eduction as to the various uses of salt that are not as widely advertised as they might be. For example, salt may be used as a fertilizer, but just how much, where and when it can be used to advantage is an unknown quantity to many who might be encouraged to its use if they were informed.

Now, what we want to say to the salt trade is, let us get together. Give us ideas first for use in this department on what may be done and how it may be done to improve the salt business, and if you and the other fellow will do that, we will soon be stirring things up. Let us start a war cry of "What is the Matter With Salt," or something of the kind, and keep it up until the echoes come back saying the same thing. We ask your co-operation and promise to do our part if you will do yours.

The new Barton salt plant at Hutchinson, Kan., is now completed and ready to manufacture salt. This new plant, it is said, is quite an improvement over the old one, which was destroyed by fire recently.

The stockholders of the Peninsular Salt Co., Detroit, Mich., held a meeting recently and elected officers for the year as follows: S. P. Hovey, president; O. S. Armstrong, vice president; J. R. Beamer, secretary, and Frank Crandell, treasurer.

The Michigan Salt Transportation Co., recently incorporated at Madison, Wis., has absorbed the Manistee, Ludington & Milwaukee Transportation Co. The officers of the Michigan Salt Transportation Co., have been elected as follows: President, W. S. Eddy, Saginaw; vice president, Edward Buckley, Manistee; treasurer, E. G. Filer, Manistee; secretary, B. P. Burns, Manistee; general manager, Gustav Kitzinger, Manistee; superintendent and general manager, F. C. Reynolds, Milwaukee.

SAND.

The M. Doland Molding Sand Co., Coxsackie, N. Y., has elected officers for the year as follows: J. Lawrence Myers, Jr., president, and treasurer Michael Doland; vice president, H. C. Fisher, and J. Lawrence, Jr., secretary.

The Holland Stone and Glass Sand Co., has been incorporated at Holland, Ohio, with a capital stock of $40,000.00. The incorporators are: Chas. W. Ryan, Romanco C. Rooch, Robert Tucker, John Ryan and Edw. T. Munea.

The Warwick Sand, Stone and Gravel Co., Cleveland, Ohio, seems to have been having an unfortunate time in a business way, and the creditors of the concern have been asking for a receiver. The liabilities of the company are $13,090.46 and the assests $6,364.61.

The Pan-American Sand and Colonization Co. has been incorporated at Applachia, Okla., with a capital stock of $50,000.00. The incorporators are: R. J. Martin and J. W. Bedwell, of Applachia, Okla.; J. H. Borders, of Kansas City, and J. M. Neeland of the State of Chiapas, republic of Mexico.

The Missouri Silica White Sand Co., successors to the St. Louis Glass Sand Co., Pacific, Mo., is building a sand dryer and storage bin of a capacity of fifty cars, and will be ready to supply dry sand to the trade by the middle of February. They claim to have a very fine quality of sand and say that the quality is well known by the glass manufacturers of this country and Canada. It is a very white sand of sharp grain, is said to melt very easily and is extensively used by steel foundries, etc.

The Brokensword Stone Co., Bucyrus, Ohio, has re-elected officers for the year as follows: Dr. John Chesney, president; P. J. Carrol, vice president; S. M. Hall, secretary, and H. E. Valentine, treasurer.

The firm of Alexander King & Co., Galesburg, Ill., has been incorporated with a capital stock of $33,000.00, to manufacture and deal in stone. The incorporators are: C. E. Allen, Alex King and E. J. King.

The Central Stone Co., Utica, N. Y., held a stockholders meeting last month and elected officers as follows: W. E. Richards, president; E. L. Munson, vice president; Bradley Fuller, secretary and treasurer; F. H. Williams, manager.

The Montana Marble and Mining Co., Helena, Mont., have had A. J. Dunton, of Rutland, Vt., looking over their marble property about five miles from Helena. Reports from there indicate that they have a fine deposit of yellow marble as well as white and blue.

The West Virginia Stone Co. has been incorporated at Moundsville, W. Va., with a capital stock of $50,000.00, to quarry and work stone. The incorporators are: A. W. Wise, of Littleton, W. Va.; G. W. Batson, of Hardy, W. Va.; P. J. Wildmar, of Cairo, W. Va.; W. H. Batson and B. P. Wise, of Moundsville.

Side Talk.

The Manhattan Tools.

The Manhattan Tool Co., of New York, successors to the American Pneumatic Tool Co., have just closed a contract with one of the largest houses in Nancy, France, for the agency of their pneumatic tools in France, Belgium, Holland, Italy, Spain and Switzerland, and are already doing a thriving business through the medium of that agency. The American Co.'s pneumatic tools are used largely in this section of the country, both for stone and iron work.

We have information from the above firm that the Shipmasters and Owners Association of England and Scotland, have, within the past month, voted almost unanimously to adopt complete pneumatic plants in their various shipyards, on and after March 1, 1904. This will, inside of the next two years, increase the demand upon all our American manufacturers of pneumatic tools from 300 to 500 per cent. After a most thorough investigation by these Englishmen and Scotchmen they became convinced that pneumatic tools are an indispensible necessity to any business that aspires to be conducted on modern lines, and the various associations which have been heretofore opposed to labor-saving machines, have also admitted their indispensability, and have joined with the employers in accepting them.

The Manhattan Tool Co., who are patrons of ROCK PRODUCTS, and who are the oldest pneumatic concern in the country, both for stone and metal work, have every reason to expect to receive their share of this new business.

Palmer Cement Building Blocks.

The use of cement building blocks as a successful substitute for wood, brick, terra cotta and stone as a real factor in the building world is of most recent birth.

The building journals contain much information largely found in the advertising columns, showing the various advantages of this new material. Durability is conceded, provided the blocks are made right by the right people of right material by right machines.

It is clear that when a manufacturer of cement block machines sells a machine that he does not provide brains or even common horse sense for the buyer. It behooves the man who is interested in the subject, either as a prospective maker of blocks or a builder, to well inform himself on the subject.

Among the pioneers was Harmon S. Palmer, of Washington, D. C., who was a prosperous builder of cement walks, when the idea of making hollow cement blocks possessed him. His first building was erected about sixteen years ago and stands today, an excelent advertisement of the practicability of his invention. There are many difficulties to be overcome, great prejudices to be silenced and a cheapening of the cost to be attained, so it might be profitably made, as now in every part of America.

Mr. Palmer has just completed a large apartment building constructed of his blocks on Mount Pleasant Heights, N. W., Washington, D. C., of which he is justly proud. He uses the lower floor for his home and extensive office, the two being entirely separated.

Busy Building Plaster Plants.

The J. N. Ehrsam & Sons Manufacturing Co., of Enterprise, Kansas, write us, "We have now on hand wall plaster mill contracts as follows: One for Umphred Bros., of Oakland, Cal., for a wall plaster mill of 50 tons capacity in 24 hours. This mill is nearing completion and will be in operation this month. One for the Oregon Lime and Plaster Co., of Portland, Ore., for a 100-ton plant. This plant will be in operation by the 15th of next month. We have just secured a contract for a 200-ton gypsite wall plaster mill, to be built at Watonga, Okla. This will be one of the largest and most modern plants in the United States."

The Jeffrey Manufacturing Co., of Columbus, Ohio, through its connection with the Ohio Malleable Iron Co., of the same place, are now in the field soliciting orders for high grade malleable castings.

The Lunkenheimer Co., Cincinnati, Ohio, makers of superior brass and iron steam specialties, report that owing to the unprecedented and growing demand for their specialties, they have again greatly increased their facilities, and are now in position to guarantee reasonably prompt shipments. They also report through their foreign branches an increasing export demand for their specialties and inform us that they will shortly place some new specalties upon the market, which will be contained in a very complete catalogue to be issued in the course of a few months.

Mr. Albert E. Doe, Jr., formerly connected with The Norcross Bros. Co., of Boston, advises that he has severed his connection with that firm, to take the position of New England salesman for the Thos. H. Dallett Co., of Philadelphia, manufacturers of stone working tools, portable drills, pneumatic hammers, etc. The Dallett Co. have recently placed on the market an improved plug drill with many new and important features that are attracting wide attention among quarry owners, and judging from the many flattering testimonial letters they are receiving, it is fully demonstrating the claims made for it. They will be pleased to have Mr. Doe call and explain its advantages to any one interested, or will send one on fifteen days' trial that it may speak for itself.

We have received from Mr. S. W. Shoop, Front Royal, Va., an illustrated description of his patent lime kiln. Mr. Shoop has been making quite a record for himself in the lime burning world the past few years constructing modern kilns, and the lime trade will read with interest the circular matter describing his patent kiln.

PARK WAITING STATION,
Built of Palmer Concrete Blocks.

We are in receipt of circular matter illustrating and describing the patent rotary mixing machines, manufactured by the Clyde Iron Works, of Duluth, Minn. The machine is designed for mixing concrete, cement mortar, plaster and other similar materials, and they claim several points of superiority for it, and have letters from engineers in charge of Government work indorsing them. They will be glad to send circular matter to any one interested in the subject of concrete mixers.

Prof. J. Dunraven Young, Chicago, Ill., accompanied by his assistant, Mr. E. A. Franke, B. S. E. M., are *en route* to the Black Hills, South Dakota, with a view to examining and making a preliminary report on several extensive tin properties in Lawrence County. These properties are partially developed and show immense bodies of low grade concentrating ore in the form of Cassiterite. A modern mill is now in course of construction. Much interest is being evinced in connection with this enterprise, and the outcome will be awaited with much interest.

The Thomas H. Dallett Co., York Street and Sedgley Avenue, Philadelphia, Pa., is issuing a new catalogue that is dainty and its special mission is to tell you about the Dallett pneumatic tools.

The Patterson Foundry Machine Co., East Liverpool, Ohio, is sending out a new catalogue illustrating their line of machines for manufacturing pottery and kindred products. The catalogue is artistically gotten up, and there is illustrated therein a full line of up-to-date clay working machinery, including everything from the boiler and engine

The American Process Co., 62 Williams Street, New York City, has favored us with a copy of their new catalogue illustrating and describing the American process dryer for drying sand, marl and a list of other materials too long to mention. The dryer is of the rotary cylinder type, and they will be glad to tell you all about it if you will write them.

Slate.

A Progressive Slate Concern.

One of the progressive slate concerns of the country is the Vermont Slate Co., Inc., manufacturers of sea green roofing slate, with offices at Granville, N. Y., and Zanesville, Ohio. The officers of the company are: John G. Williams, Fair Haven, Vt., president; H. F. Rohrman, Zanesville, Ohio, vice president; F. B. Torbert, Zanesville, secretary.

This company is operating at West Pawlet, on what is called the West Pawlet vein, which crosses the Thompson and Dillingham farms, giving about 1½ miles along the slate vein. The quarries were formerly known as the Warren quarries, which were opened by the father of Mr. J. G. Williams, who is president of the company. The quarries were later operated by J. S. Warren. Another set of quarries operated are known as the Busch quarries. The slate produced is marketed under the name "Superior" sea green slate.

Mr. Williams is a man who has been acquainted with the production of slate for many years. Mr. Rohrman has been familiar with the selling for fifteen years. This should make a strong team.

The equipment at the Vermont property is said to be very complete. A 150 h. p. boiler was recently added to power plant. The Zanesville warehouse and distributing office is also doing a metal jobbing business and are at present putting in power in order to manufacture the Vermont safety oil can, on which they hold patents.

This firm will have an individual State exhibit at the World's Fair at St. Louis.

Have Put a Channeling Machine in Slate.

The Arcade Slate Co., Slatington, Pa., which leased the slate quarry of J. Ruskin Jones, last April, say: "We have a new shaft sunk to the slate and timbered it up to the top, about forty feet. We also put up a new saw bench of Ruggles Machine Co., and at a late date started a channeling machine. The demand for slate roofing and school slate is quiet at present."

The Pelican Slate Co., plant near Wind Gap, Pa., was destroyed by fire the past month. The loss is estimated at $50,000.00.

The past year has been a prosperous one with the Consolidated Slate Co., Poultney, Vt., and the company reports a sale 29,000 squares of slate.

The Stony Brook Slate Co., Stony Brook, Pa., has erected a new building and installed boiler, engine and other machinery to operate the quarry.

The Chapman Slate Co., Bethlehem, Pa., held a stockholders' meeting the past month and elected officers as follows: William B. Meyers, president and treasurer, and Clifford R. Chapman, secretary.

The Cambridge Slate Co., of Slatington, Pa., has elected officers for the year as follows: David R. James, president; Benjamin F. James, vice president; John C. McGinnis, of Frackville, secretary; William J. James, treasurer. The company reports a rich find of slate and a good outlook ahead in a business way.

The Madoc Slate Co., which operates in the Slatington, Pa., district, produced the past year a gain of 200 per cent. over last year. At a recent stockholders meeting the company elected officers for the year as follows: C. R. James, Allentown, Pa., president; Wm. H. Rodgers, Colonial Trust Building, Philadelphia, Pa., vice president; Samuel Bolton, Slatington, secretary.

The condition of the slate industry, as this journal has from time to time noted, is very prosperous throughout the country. One of the results of this condition, to which attention is called, is the extensive development of the Hot Spring, Ark., slate fields now in progress. These fields are said to contain an abundance of excellent black, red and green slate, favorably situated for production, and those interested say the only requisite to put the industry upon a firm and profitable basis, is capital.